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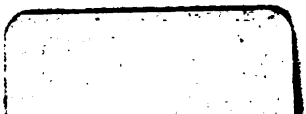
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VOL. XVIII.

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SMITHSONIAN

MISCELLANEOUS COLLECTIONS.

VOL. XVIII.



"EVERY MAN IS A VALUABLE MEMBER OF SOCIETY WHO BY HIS OBSERVATIONS, RESEARCHES, AND EXPERIMENTS PROCURES KNOWLEDGE FOR MEN."—SMITHSON.

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SPENCER F. BAIRD,
Secretary Smithsonian Institution.

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THE SMITHSONIAN INSTITUTION:

JOURNALS

OF THE

BOARD OF REGENTS, REPORTS OF COMMITTEES, STATISTICS, ETC.

EDITED BY

WILLIAM J. RHEES.



WASHINGTON:
PUBLISHED BY THE SMITHSONIAN INSTITUTION.
1879.

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ADVERTISEMENT.

In accordance with the instructions of the Board of Regents to the Secretary to have prepared and to publish a history of the origin and progress of the Smithsonian Institution, the present volume has been compiled. It contains the Journal of Proceedings of the Board of Regents from its first meeting, September 13, 1846, to January 26, 1876; together with the reports of the Executive, Building, and Special Committees for the same period. Eulogies on deceased members of the Board, and distinguished collaborators of the Institution, are given, and also an account of the Bache Scientific Fund, the Tyndall Trust, the Corcoran Gallery of Art, the Toner Lectures, the Hamilton Bequest, the report of the Committee of the Board on the invention of the electro-magnetic telegraph, the report of the examination of Prof. Henry by the English Scientific Commission, and statistical tables relative to the Institution.

The material for the volume has been collected, and the work edited by Mr. Wm. J. Rhees, Chief Clerk of the Institution.

SPENCER F. BAIRD,
Secretary Smithsonian Institution.

WASHINGTON, D. C., *December*, 1879.

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JOURNAL OF PROCEEDINGS

OF THE

BOARD OF REGENTS OF THE SMITHSONIAN INSTITUTION.

WASHINGTON, D. C., *September* 7, 1846.

By direction of the President of the United States a room in the General Post Office building was appropriated for the use of the Board of Regents of the Smithsonian Institution.

Present, Hon. George M. Dallas, Vice-President of the United States; Hon. Roger B. Taney, Chief Justice; Hon. William W. Seaton, Mayor of the city of Washington; Hon. George Evans, Senator; Hon. Isaac S. Pennybacker, Senator; Hon. Robert Dale Owen, Representative; Hon. William J. Hough, Representative; Hon. Henry W. Hilliard, Representative; Hon. Rufus Choate, of Massachusetts, citizen at large; Hon. Gideon Hawley, of New York, citizen at large; Hon. Richard Rush, of Pennsylvania, citizen at large; Hon. Alexander Dallas Bache, National Institute; Hon. Joseph G. Totten, National Institute.

For the purpose of a preliminary organization of said Board, Hon. George M. Dallas was appointed President, and Hon. Wm. J. Hough Secretary.

On motion, it was—

Resolved, That the President appoint a suitable person doorkeeper, who shall also act as messenger of said Board during the present session.

Whereupon, the President appointed William McPeak doorkeeper and messenger.

The following resolutions were adopted:

Resolved, That the Rules and Orders of the Senate of the United States be adopted as the Rules and Orders for the government of this board, until others shall be adopted in their stead.

Resolved, That the Secretary of this institution, hereafter to be elected, procure from the Department of State a copy of the joint resolution of the two Houses of Congress by which a portion of the Regents of this institution were appointed; and that he also procure from the Secretary of the Senate and from the clerk of the House of Representatives, respectively, a certificate of the appointment of the Regents from their respective Houses, and file the same in the office of the Secretary of said institution.

Resolved, That all further action of this Board in relation to the election of officers be postponed until to-morrow.

Resolved, That when this Board adjourn it adjourn to meet at 10 o'clock, to-morrow morning.

Whereupon, on motion, the Board adjourned.

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September 8, 1846.

The Board of Regents met, pursuant to adjournment, in a room in the Patent Office building.

Present, the same Regents mentioned in yesterday's proceedings, except Mr. Totten, who is absent in consequence of sickness.

It was—

Resolved, That the Board proceed to elect a Chancellor.

The Board then proceeded to the election of a Chancellor by ballot, and, upon counting the ballots, it appeared that Hon. George M. Dallas was unanimously elected.

Thereupon, it was—

Resolved, That Hon. George M. Dallas be, and he is hereby, declared to be unanimously elected Chancellor of the Board of Regents and of the Smithsonian Institution.

It was—

Resolved, That the Board proceed to elect a member thereof Secretary of said Board of Regents and of the Smithsonian Institution.

The Board then proceeded to the election of a Secretary by ballot, and, upon counting the ballots, it appeared that Hon. William J. Hough was elected.

Thereupon, it was—

Resolved, That Hon. William J. Hough be, and he is hereby, declared to be elected Secretary of the Board of Regents and of the Smithsonian Institution.

It was—

Resolved, That the Secretary do now prepare six ballots, on two of which the word "two" shall be written, on two others the word "four," and on the remaining two the word "six;" and that each of the Regents appointed by the joint resolution of Congress of the 10th August, 1846, draw one of said ballots; and the Regents who draw the ballots with the word "two" thereon shall hold their office of Regents for the term of two years; the Regents who draw the ballots with the word "four" thereon shall hold their office for the term of four years; and the Regents who draw the ballots with the word "six" thereon shall hold their office for the term of six years, in conformity with the act to establish the "Smithsonian Institution for the increase and diffusion of knowledge among men," approved August 10, 1846.

It was—

Resolved, That the Chancellor draw the ballot for any Regent who is not present.

The ballots were prepared and drawn, as provided in the foregoing resolutions, and resulted as follows:

Mr. Choate drew for two years; Mr. Hawley drew for two years; Mr. Rush drew for four years; Mr. Totten drew for four years; Mr. Bache drew for six years; and Mr. Preston drew for six years.

The Board then proceeded to the election of an Executive Committee, by ballot; and, upon counting the ballots, it appeared that Mr. Owen, Mr. Seaton, and Mr. Totten were elected.

Thereupon, it was—

Resolved, That William W. Seaton, Robert Dale Owen, and Joseph G. Totten be, and they are hereby, declared duly elected the Executive Committee.

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It was then—

Resolved, That William W. Seaton be, and he is hereby, appointed chairman of said Executive Committee.

It was further—

Resolved, That the chairman of the Executive Committee be the disbursing officer, for the payment of the expenses of the Regents, and other contingent and incidental expenses of the sessions of the Board, and be authorized to receive from the proper officer of the Treasury Department whatever sum may be certified by the Chancellor and Secretary to be necessary for that purpose.

It was—

Resolved, That the Secretary be authorized to employ a recording clerk, as an assistant in the discharge of his duties, whose compensation shall be determined by the Executive Committee.*

It was—

Resolved, That the Secretary be authorized to procure a book, in which the proceedings of the Board shall be recorded; and a description of the site selected by the Board, set out by metes and bounds, shall be made and signed by the Regents present, and shall have also appended the assent of the President, the Secretary of State, the Secretary of the Treasury, the Secretary of War, the Secretary of the Navy, and the Commissioner of the Patent Office, to the same. And the Secretary shall also record in the same the will of James Smithson; the original act of Congress accepting the trust; the law establishing the existing institution; the resolution of Congress appointing Regents of the Smithsonian Institution; also, the certificates of the secretary of the Senate and clerk of the House of Representatives, respectively, as to the Regents appointed from their respective houses.

It was—

Resolved, That a committee of three be appointed by the Chancellor, from the members of the Board, to digest a plan to carry out the provisions of the act to establish the Smithsonian Institution, and that they report the same to the next meeting of the Board.

Whereupon, the Chancellor appointed Mr. Owen, Mr. Hilliard, and Mr. Bache said committee.

The following preamble and resolution were offered and agreed to:

Whereas the act to establish the Smithsonian Institution prescribes an appropriation, not exceeding an average of twenty-five thousand dollars annually, for the gradual formation of a library, composed of valuable works pertaining to all departments of human knowledge: Therefore—

Resolved, That a committee of three be appointed, to prepare a report upon the subject of the formation of such a library, indicating its general character and the modes of proceeding to accumulate it, and to present such a report at the next regular meeting of the Board.

Whereupon, the Chancellor appointed Mr. Choate, Mr. Hawley, and Mr. Rush said committee.

Adjournedto 10 o'clock to-morrow morning.

September 9, 1846.

The Board met pursuant to adjournment.

Present, the same Regents as yesterday.

Mr. Owen presented to the Board, in behalf of David Dale Owen,

---

* In compliance with the seventh section of the act of Congress establishing the Smithsonian Institution, and with this resolution, the Secretary appointed Benjamin B. French, Esq., Assistant Secretary and Recording Clerk of the institution.

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M. D., of Indiana, a plan, drawings, and specifications of a building for said institution.

Mr. Owen also presented a plan and drawings for the same from Mr. Robert Mills, architect of the city of Washington.

The following resolutions were adopted:

Resolved, That the Chancellor and Secretary of the Smithsonian Institution and the Executive Committee of the Board of Regents be, and they are hereby, authorized and instructed to take such measures as may be deemed by them most proper to obtain plans for the erection of buildings, fulfilling all the conditions in reference to them contained in the law organizing this institution, and that said committee report such plan as they may approve to this Board, at its next meeting; and further, that said committee specially report in regard to the best material for said buildings, and to the best modes of warming, lighting, and ventilating the same, with estimates of the cost when constructed of different materials; and that they further report in regard to such other matters as they may consider important in the premises.

Resolved, That the thanks of this Board be offered to David Dale Owen, M. D., of Indiana, for the plans of buildings for the Smithsonian Institution, presented on his behalf; and that said plans, with the correspondence explanatory of the same, and any other plans which may be presented to this Board, be referred to the committee just named.

Resolved, That the committee appointed to report at the next session are authorized to purchase such works, per account of the Board, on architecture, bibliography, and the like, as they may deem necessary to enable them to perform the duties of their appointment; to visit any structures and collections in this country; and also to avail themselves of the suggestions of other skillful persons, and to offer therefor, if necessary, such remuneration as the Regents may choose subsequently to make.

Resolved, That the regular meetings of the Board of Regents shall be on the second Wednesday of December and the third Wednesday of February in each year; and on the first Wednesday of June in each alternate year, commencing with the first Wednesday of June in the year 1848.

Resolved, That Mr. Rush be a committee to ascertain, through the solicitors formerly employed by him on behalf of the United States in the suit to obtain the Smithsonian bequest, or otherwise, whether Madame De la Batut still survives; and if not, what steps are necessary to be taken to obtain the fund reverting to the United States at her death; being a portion of the original property of James Smithson retained by the English court of chancery, in order to furnish, in the shape of interest, an annuity to the said Madame De la Batut. And further, in case the said Madame De la Batut survives, to adopt measures by which her decease may be communicated to the Board whenever that event may occur. And that Mr. Rush report to the Executive Committee the legal charge thus incurred, which the said committee is hereby authorized to pay.

Resolved, That the Secretary be requested to contract for the printing, on good paper and in neat pamphlet form, of two hundred and fifty copies of the original law accepting the trust and of the law of last session organizing the institution, the pamphlet also to include the names and residences of the present Board of Regents; and that six copies be sent to each of the Regents and to each member of the Establishment.

Resolved, That the subject of the selection of a site be referred to the committee on the buildings constituted at this meeting, to report at an adjourned meeting of this Board.

Resolved, That when this Board adjourn, it adjourn to meet at the Vice-President's room, at the Capitol, in the city of Washington, on the last Monday of November next, at 12 o'clock, at noon.

Resolved, That Mr. Choate and Mr. Pennybacker be added to the committee appointed yesterday to digest a plan to carry out the provisions of the act establishing the Smithsonian Institution.

Resolved, That the Secretary be requested, without unnecessary delay, to collect, on behalf of the institution, all the documents, Congressional and others, connected with the history of the Smithsonian bequest, and of its legislation, and cause them to be substantially bound, as a commencement of its library.

William Archer, Esq., architect, of the city of Washington, pre-

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sented to the Board a plan and drawings for a building for the institution, together with specifications and estimates of the cost, &c.; which were referred to the Committee on Buildings.

And then, on motion, the Board adjourned until the last Monday in November next.

November 30, 1846.

Agreeably to their adjournment on the 9th day of September last, a meeting of the Regents of the Smithsonian Institution was held at the room of the Vice-President of the United States, in the Capitol.

George M. Dallas, the Chancellor, (and one of the Regents,) and the following Regents appeared, viz: William W. Seaton, Isaac S. Pennybacker, Sidney Breese, Robert Dale Owen, William J. Hough, Henry W. Hilliard, Richard Rush, Gideon Hawley, Alexander Dallas Bache, and Joseph G. Totten.

Messrs. Hough, Seaton, Totten, Rush, and the Chancellor, each presented sundry letters, recommendations, &c., relative to applications for the office of secretary of the institution; which were severally placed upon file for future consideration.

Mr. Rush presented a letter from Miss Legaré, sister of the late Hugh S. Legaré, asking the Regents to purchase the library left by her brother; which was placed upon file for future consideration.

The Chancellor, from the committee appointed at the last session of the Board of Regents "to obtain plans for the erection of buildings," to consider as to materials, the warming and lighting the buildings, &c., made the following report, accompanied by sundry letters from Mr. Owen to Mr. Seaton, giving a detailed account of the examinations made by himself, Mr. Hough, and Mr. Totten, as a sub-committee in Philadelphia, New York and Boston and from Mr. David Dale Owen, Professors Silliman and Fowler, in relation to the selection of material for the erection of the institution building.

The undersigned, a committee appointed by the Board at its session on the 9th of September last, respectfully report:

In order "to obtain plans for the erection of buildings," to form some judgment "in regard to the best material for said buildings," and to ascertain "the best modes of warming, lighting and ventilating the same," the committee took the following measures:

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With a view to give, as extensively and rapidly as possible, notice to the architects of the country of the objects and duties of the committee, the resolution by which they were constituted was published in the newspapers of this city on the 22d day of September, 1846.

The shortness of time, however, rendering it probable that no satisfactory communications would be received from architects before the present meeting of the Board, the committee entered upon a tour of personal inspection, hoping to accumulate information that might guide the Board in the choice of a plan for building; and Mr. Owen, Mr. Hough, and Col. Totten visited our principal cities, examined many if not all of their most noted structures, had conferences with several of their architects eminent for science and success, collected specimens of the best stone material, and obtained data upon which to "estimate the cost of the contemplated building when constructed of different materials."

At the city of Philadelphia, the Girard College, the Eastern Penitentiary, the House of Refuge, the hall of the Mercantile Library Company, the Exchange, the Custom-house, (formerly the Bank of the United States,) and the Athenæum, now being built, were visited.

Mr. Strickland and Mr. Walter were called upon, but were unfortunately absent from the city. Mr. Haviland was also called upon; but not being seen, all necessary information was sent to him through his son. Mr. Notman was seen and repeatedly conversed with.

At the city of Trenton, the State Lunatic Asylum, and the old but renovated State-House, were visited.

In examining these edifices, advantage was derived from the constant presence and intelligent remarks of Mr. Notman.

At the city of New York, Grace Church, Calvary Church, the Church of the Puritans, the Tombs, Trinity Church, the University, Dr. Pott's Church, the Muhlenburg Church, Mr. Bellows' Church, the Church of the Pilgrims, and several other churches, were visited. Much valuable information was obtained at consultations with Mr. Renwick, accompanied by his father, Professor Renwick; Mr. Upjohn, Mr. Warren, Mr. Thompson, Mr. Mountain, Mr. Wells, Mr. Arnot, and Mr. Jewett. Mr. Hough took occasion to visit also the marble quarry at Hastings, and several other quarries in the vicinity of New York.

At the city of Boston, the Masonic Temple, the Howard Street Athenæum, the new Custom-House, the Merchants' Exchange, the new Theatre, and other structures, were visited. Mr. Rogers and Mr. Young were the architects conferred with.

At the city of Cincinnati, interviews were had with Mr. Daniels and Mr. Walter.

During the visits thus briefly sketched, a series of letters were written by Mr. Owen to Mr. Seaton, embodying the fruits of each day's exertion, and communicating very many details of great interest. These are best submitted to the Board in their original form; the committee therefore annex them to this report.

Valuable letters have been received from David Dale Owen, Professor Silliman, and Professor Fowler, in relation specially to the comparative merits of marble and sandstone: these also are annexed for the inspection of the Board.

In order still further to assist the judgment of the Board on the important point of the choice of material for the building, the committee have caused several sample walls of different stone to be thrown up for their examination.

It will be perceived, by the correspondence of Mr. Owen, that the architects with whom he conferred are required to transmit their several plans to the Board by the 25th of December next. Until they are received, no definite choice can be made; and as "*the best material*," and "*the best modes of lighting and ventilating*," together with "*estimates of the cost*," could, in the opinion of the committee, only be safely determined by reference to the plan finally adopted, they have abstained from treating those points further than they are touched upon in the annexed correspondence.

"The selection of a site" is a subject also referred to this committee; but as it was made a matter of personal examination by the whole Board at their last meeting, the committee respectfully confine themselves to reporting the following resolution:

Resolved, That the Regents of the Smithsonian Institution do select and adopt as the site for their buildings, so much of the Mall, in the city of Washington, as lies between Seventh street and the river Potomac, if the consent of the persons named in the fourth section of the act to establish the Smithsonian Institution for the increase and diffusion of knowledge among men, be obtained thereto; and that upon such con-

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sent being obtained in due form, the Secretary is hereby instructed to cause the said ground so selected to be set out by proper metes and bounds.

All which is submitted by

G. M. DALLAS, *Chairman.*
WM. J. HOUGH.
ROBERT DALE OWEN.
JOS. G. TOTTEN.
W. W. SEATON.

WASHINGTON, *November* 30, 1846.

The committee unanimously selected, out of thirteen plans, that were submitted to them by some of the principal architects throughout the country, two by Mr. James Renwick, jr., of the city of New York, the architect of Grace Church, the Church of the Puritans, Calvary Church, and other structures, in and near New York; and they recommended to the Board for adoption one of these, being a design in the later Norman, or, as it may, with more strict propriety, be called, the Lombard style, as it prevailed in Germany, Normandy, and in Southern Europe, in the twelfth century. The design comprises a centre building, with two wings, connected with the main building by low ranges and a cloister. The entire front is 421 feet, and the extreme depth in the centre, including the carriage porch, 153 feet. The height of the principal tower is 145 feet, and that of the main building, to the summit of the battlement, 58 feet. The design includes all the accommodations demanded by the charter, to wit: a museum, 200 feet by 50; a library, 90 feet by 50; a gallery of art, in the form of a T, 125 feet long; two lecture rooms, one of which is capable of containing from 800 to 1,000 persons, and the other is connected with the chemical laboratory; a committee room for the Board of Regents; a Secretary's room; a room for the effects of Mr. Smithson; a janitor's room, &c.

The contracts are not yet made; but the building committee hope to complete the structure, and to fit up and furnish the same, not only without encroachment on the capital of the institution, which by the act organizing the institution is expressly forbidden, but so as to leave a considerable portion of the amount specially set apart by that act for building unexpended.

The material for the exterior of the building has not yet been selected. The Board has authorized the publication, by the building committee, of a small volume, which will give to the public the design of the building, and all important particulars regarding materials, &c.

The report and letters having been read were placed upon file.

The resolution accompanying the report was then taken up for consideration, and pending the question on the adoption thereof.

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On motion of Mr. Breese—

Ordered, That when the Board adjourn it will adjourn to meet at 12 o'clock to-morrow.

On motion of Mr. Breese, the Board adjourned until to-morrow at 12 o'clock, meridian.

December 1, 1846.

Mr. Evans, one of the Regents, appeared.

The Chancellor laid before the Regents the following letter from Chief Justice Taney, a Regent of the institution:

BALTIMORE, *November* 28, 1846.

DEAR SIR: I regret that it will not be in my power to attend the meeting of the Regents of the Smithsonian Institution on Monday next. The circuit court for the district of Maryland has been in session since the beginning of this month, and must continue in session all of next week, in order to dispose of the business before it. Be good enough to mention to the Board the cause of my absence, and believe me to be, with great respect, your obedient servant,

R. B. TANEY.

GEORGE M. DALLAS,
Vice-President of the United States, Washington.

Mr. Owen presented a letter from J. Renwick, Jr., of New York, describing and commenting upon the materials used in building in the city of New York, which was read and placed upon file.

Mr. Breese presented sundry letters and recommendations relative to applications for office, agencies for the purchase of books, &c., which were placed on file for future consideration.

Mr. Rush, from the committee appointed to ascertain whether Madame de la Batut still survives, and if not, what steps are necessary to obtain the remainder of the Smithsonian fund reverting to the United States at her death, and if she is still living, what steps are necessary to obtain the fund at her death, made a report thereon in part, stating that he had written to Messrs. Clarke, Fynmore, and Fladgate, solicitors, residing in London, making the proper inquiries, but had yet received no answer.

A copy of his letter was then submitted, read, and put on file.

Mr. Owen, from the Committee on the Organization of the institution, made a report, accompanied by a series of resolutions, which were read.

On motion of Mr. Owen, the consideration of the resolutions was postponed until to-morrow.

The Board proceeded to the consideration of the resolution pending yesterday when the Board adjourned.

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Mr. Seaton proposed that the same be amended, by inserting after the word "Potomac" the following:

"Intending to authorize the erection of a monument to George Washington, by the Washington Monument Association, on a part of the said site, which lies between Fourteenth street and the river."

Mr. Evans moved that the said amendment be amended by substituting therefor the following:

"Subject to the power of Congress to grant any portion of the same west of Fourteenth street to the Washington Monument Society, for the purpose of erecting a monument thereon."

And the question being put on agreeing to the amendment of Mr. Evans, it was decided in the affirmative.

The amendment, as amended, was then agreed to, and the resolution, as amended, was agreed to.

And so it was—

Resolved, That the Regents of the Smithsonian Institution do select and adopt, as the site for their buildings, so much of the Mall, in the city of Washington, as lies between Seventh street and the river Potomac, subject to the power of Congress to grant any portion of the same west of Fourteenth street to the Washington Monument Society, for the purpose of erecting a monument thereon, if the consent of the persons named in the fourth section of the act to establish the Smithsonian Institution for the increase and diffusion of knowledge among men be obtained thereto; and that, upon such consent being obtained in due form, the Secretary is hereby instructed to cause the said ground so selected to be set out by proper metes and bounds.

On motion of Mr. Evans—

Ordered, That the committee on the selection of a site be instructed to wait upon the President of the United States, and lay before him a certified copy of said resolution; and that the Secretary communicate a copy of the same to each of the officers mentioned in the act of Congress establishing the institution.

On motion of Mr. Evans—

Ordered, That the Chancellor and each chairman of a committee be a committee to prepare "a report of the operations, expenditures, and condition of the institution," for submission to Congress, agreeably to the third section of the act establishing the same.

On motion of Mr. Seaton, the Board adjourned until to-morrow, at 12 o'clock meridian.

December 2, 1846.

Mr. Choate, one of the Regents, appeared.

Mr. Owen presented sundry applications for the office of secretary of the institution; which were placed on file for future consideration.

Mr. Owen presented a letter from A. Randall, of the city of St. Louis, asking that the time fixed by the Building Committee of the Board of Regents, for the furnishing of plans for the building, may be extended; which letter was placed on file.

Mr. Owen presented a letter from Nahum Capen, of Boston, suggesting the formation of a statistical department of the institution; which was placed on file for future consideration.

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Mr. Bache presented a paper signed by members of the American Philosophical Society, recommending Titian R. Peale as a person eminently qualified to take charge of the collections of the institution; which was placed on file for future consideration.

A motion was made by Mr. Breese to reconsider the vote by which the Board yesterday adopted the resolution selecting and adopting a site for their buildings.

After debate, the motion of Mr. Breese was postponed until to-morrow.

The resolutions reported yesterday by Mr. Owen, from the Committee on Organization, came up in order for consideration.

At the suggestion of Mr. Choate that he wished to examine the report accompanying them;

On motion of Mr. Owen, the resolutions were further postponed until to-morrow.

Mr. Breese offered the following resolution:

Resolved, That at one o'clock, p. m., to-morrow, the Board will proceed to the election of a secretary of the institution.

Which was read, and on motion of Mr. Breese, laid upon the table.

On motion of Mr. Hough, the Board adjourned until to-morrow, at 12 o'clock, meridian.

December 3, 1846.

The Chancellor laid before the Board the following communication from the Assistant Secretary.

OFFICE HOUSE OF REPRESENTATIVES UNITED STATES, *December* 3, 1846.

SIR: Having been appointed Assistant Secretary of the Smithsonian Institution in September last, by the Secretary, (Hon. Mr. Hough,) the performance of all the duties of Secretary in this city in his absence devolved upon me.

As it may at some future period be important, if it is not now, that the Regents should be informed of my official action, I most respectfully submit the following statement:

By direction of the Secretary I caused sundry official documents, relative to the institution, together with the proceedings of the first meeting of the Regents, to be recorded in a large record book marked A. As this labor was performed in a manner exceedingly creditable to the person who performed it, I will take the liberty to say that it was done by Adam J. Glossbrenner, Esq., of Pennsylvania, a clerk in the office of House of Representatives.

In conformity with the special direction of the Regents at their first meeting, and at the request of the Secretary, I collected all the printed documents in relation to the bequest of James Smithson, and caused them to be handsomely and strongly bound in a volume which I have taken the liberty to present to the institution. Up to the day on which the present session commenced, twenty-four volumes of books and seven pamphlets came into my possession for the instituion—some of them as presents, others under the copyright provision of the tenth section of the act of Congress establishing the institution. Since the session commenced two volumes of books and one pamphlet have been presented.

The following is a complete list of the books now in my possession:

* * * * * * * * * * *

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I acknowledged the receipt of each of the foregoing books by letter, addressed through the mail, to the person who sent it.

Accompanying the Bibliotheca Americana Nova, from O. Rich, Esq., of London, is a note addressed to the Regents, in which he offers his services in supplying any books they may require from England or any part of Europe.

Mr. Rich also addressed a note to me, making substantially the same offer, to which I replied, presenting my thanks, as Assistant Secretary, for the books sent, and promising to bring the subject to the attention of the Regents at this meeting.

Many letters have been addressed to me in relation to the institution, making many inquiries, but not as I deemed of a nature to make them official.

Every letter received has been answered, giving all the information in my possession as to the subjects inquired about.

With the best wishes for the perfect success of the institution, I am, with high respect, your obedient servant,

B. B. FRENCH,
Assistant Secretary.

Hon. GEO. M. DALLAS,
Chancellor of the Regents of the Smithsonian Institution.

The Chancellor also presented a letter from Alexander Jones to the Assistant Secretary, asking to be appointed agent of the institution in New York for receiving and forwarding books, which was read and placed on file.

Mr. Owen presented letters recommending sundry persons for the Secretaryship of the institution, which were placed on file for future consideration.

Mr. Choate, from the committee appointed at the meeting of the Regents in September, in relation to the formation of a library, made a report, accompanied by resolutions, which were read.

On motion of Mr. Owen, the resolutions accompanying the report made by him from the Committee on Organization were taken up for consideration.

Mr. Owen moved that the Board proceed to consider the resolution relative to the qualifications of secretary, and numbered 13; which motion was agreed to.

The said resolution was then read, as follows:

[No. 13.] *Resolved*, That it is essential, for the advancement of the proper interests of the trust, that the Secretary of the Smithsonian Institution be a man possessing weight of character, and a high grade of talent; and that it is further desirable that he possess eminent scientific and general acquirements; that he be a man capable of advancing science and promoting letters by original research and effort, well qualified to act as a respected channel of communication between the institution and scientific and literary individuals and societies in this and foreign countries; and, in a word, a man worthy to represent before the world of science and of letters the institution over which this Board presides.

And the question being put on agreeing to the same, it was decided in the affirmative.

The remainder of the resolutions were then postponed for the present.

On motion of Mr. Owen, the resolution offered by Mr. Breese yesterday relative to the election of a Secretary was taken up. Mr. Breese modified the same to read as follows:

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Resolved, That the Board will proceed forthwith to the election of a Secretary of the institution.

And thus modified, it was agreed to.

The Board then proceeded to elect a Secretary by ballot, when it appeared that there were twelve votes cast, of which—

Professor Joseph Henry had - - - - -	7
Francis Markoe, Jr., had - - - - - -	4
Dr. Pickering had - - - - - - -	1
Whole number - - - - - -	12

Necessary to a choice, 7.

Professor Joseph Henry, of Princeton, in the State of New Jersey, having a majority of all the votes given in, was declared by the Chancellor duly elected Secretary of the institution.

And thereupon, on motion of Mr. Owen, it was unanimously—

Resolved, That the Board approve the election of Professor Henry as Secretary of the institution, and invite him to assume the duties of that office.

Ordered. That Mr. French continue to act as Assistant Secretary until the Secretary elect shall appear and enter upon his duties.

On motion of Mr. Evans, the Board proceeded to the consideration of the motion made by Mr. Breese yesterday, that the vote by which the resolution adopting a site for the buildings of the institution was passed be reconsidered.

And the question being put, Will the Board reconsider the said vote? It was decided in the negative.

So the resolution stands adopted.

On motion of Mr. Evans—

Ordered, That when the Board adjourn to-day it adjourn to meet at 10 o'clock, a. m., to-morrow.

On motion of Mr. Breese, the Board adjourned until 10 o'clock, a. m., to-morrow.

December 4, 1846.

The Board proceeded to the consideration of the resolutions accompanying the report of the Committee of Organization; when the following of the said resolutions (numbered as they were reported) were read and agreed to, viz:

[No. 8.] *Resolved*, That the Secretaries of State, of the Treasury, of War, and of the Navy of the United States, be respectfully invited to furnish to consuls and other public officers, in this and foreign countries, under their respective departments, such suggestions as they may deem proper in regard to the procurement, as opportunity offers, of additions to the museum of the institution, especially to its ethnological department; that three hundred copies of this report, when printed, be placed at the disposal of each of the above-named Secretaries, as an explanation to these public functionaries of the views of the institution in regard to a museum; and that five hundred dollars be, and the same is hereby, appropriated, out of the accruing interest, to pay transportation or other expenses connected with the transmission from foreign parts to Washington of any collections thus made; and to such contributions,

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when placed in the museum, the name of the officer obtaining and forwarding the same shall in all cases be appended.

[No. 4.] *Resolved*, That the Secretary of War be respectfully invited to furnish to the Commissioner of Indian Affairs such suggestions as he may deem proper regarding the procurement from the Indian country of collections for the museum of the Smithsonian Institution, illustrating the natural history of the country, and more especially the physical history, manners and customs, of the various tribes of aborigines of the North American continent; that one hundred copies of this report, when printed, be placed at his disposal, as a means of informing the various Indian agents of the special character of the collections desired; and that the sum of five hundred dollars be, and the same is hereby, annually appropriated, out of the accruing interest of the Smithsonian Institution, for the procurement and transportation of such Indian collections; and, when placed in the museum, there shall be appended to each the name of the agent through whom the same may be procured.

[No. 5.] *Resolved*, That the public generally be invited to furnish contributions to the museum of the Smithsonian Institution; and that all such contributions, when considered worthy of a place, shall be labelled with the name and residence of the donor.

[No. 6.] *Resolved*, That ten copies of the report accompanying these resolutions be furnished to each member of the Senate and House of Representatives, and each member be respectfully requested to transmit these to newspapers and to individuals, in his district or elsewhere, who may be likely to take interest in the proceedings of the institution.

[No. 12.] *Resolved*, That for the year eighteen hundred and forty-seven the sum of one thousand dollars be, and the same is hereby, appropriated for laying out the grounds of the institution, and for the purchase, transplantation, and temporary fencing of the trees therein; to be expended under the direction of the Executive Committee.

[No. 15.] *Resolved*, That of this report, in such form as it may be ultimately adopted, five thousand copies be printed, under the direction of the Secretary; and that he be required to transmit a copy of the same to each of the principal scientific and literary societies, both in this and in other countries; and also to such individuals, of scientific or literary reputation, as he may judge likely to find interest in the proceedings of the institution.

The Board proceeded to the consideration of the following resolution:

[No. 1.] *Resolved*, That for the present, out of the interest accruing to the institution, the sum of twenty thousand dollars be, and the same is hereby, appropriated for the purchase of books and the gradual fitting up of a library, and all other incidental expenses relating to the library, except the salaries of the librarian or librarians; the said appropriation to commence from the first of January, eighteen hundred and forty-eight.

A motion was made by Mr. Hough, that the same be amended, by striking out "twenty thousand dollars," and inserting "twelve thousand dollars;" which motion was disagreed to.

Mr. Rush moved that "twenty thousand dollars" be stricken out, and "fifteen thousand dollars" inserted; which motion was disagreed to.

The question was then put, Will the Board agree to the resolution? and it was decided in the affirmative.

The following resolution was then read and agreed to, viz:

[No. 2.] *Resolved*, That the portion of the building to be for the present set apart for a library, be of sufficient capacity to contain not less than one hundred thousand volumes; and that it is desirable that the plan should be such as to render an extension practicable, if hereafter desired.

The following resolution was then read and agreed to, viz:

[No. 11.] *Resolved*, That for the present the sum of four thousand dollars, out of the

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interest accruing to the institution, be appropriated for the purchase of philosophical and chemical apparatus, models, &c.; the said appropriation to commence on the first day of January next.

The following resolution was then read and agreed to, viz:

[No. 7.] *Resolved*, That it is expedient to include ultimately in the plan of the institution popular lectures on useful subjects—as on agriculture and its latest improvements; on the productive arts of life; on the sciences, and the aid they bring to labor; on common school instruction, including the proper construction of school rooms, the most improved apparatus for teaching, and the most judicious management, moral and intellectual, of children in common schools; also, if suitable lecturers be found, on history, natural and civil, including the physical history of the various races of men, and the gradual advance of each to its present state of civilization; on political economy, in its practical connection with the every-day business of life; and generally on any department of useful knowledge not strictly professional.

The following resolutions, Nos. 8, 9, 10, and 14, were read; and upon suggestions that it was desirable that the Secretary elect should be consulted before their adoption, they were postponed until the next meeting of the Board of Regents.

[No. 8.] *Resolved, further*, That if the funds of the institution permit, it is desirable that such lectures should be delivered not only at Washington, but gradually and successively at different points in all the States in the Union, either by permanent professors or temporary lecturers, engaged on behalf of the institution.

[No. 9.] *Resolved*, That, if the funds of the institution permit, there may be properly included in the plan the publication, periodically or otherwise, of popular tracts on the above subjects.

[No. 10.] *Resolved*, That, as one of the most effectual means of increasing knowledge among men, it shall be made a part of the duty of one or more of the officers who may be engaged by the institution to institute original researches in the branch of science to which he may be devoted; and that it shall be the duty of the Secretary, when such researches eventuate successfully, to communicate the results to other scientific societies throughout the world; and to invite, in return, communications of a similar character from them.

[No. 14.] *Resolved*, That, in case of the organization of a board of professors, the said Secretary shall be *ex officio* president of the said board of professors, with the usual rights and powers of the president of a faculty; and, as president of said board, it shall be his privilege, when thereto authorized by said board, to make, on their behalf, any statement or representation to the Board of Regents, either written or verbal; and if any debate or discussion arise thereupon in the Board of Regents, he shall have the right to join therein; but in all cases without a vote in said Board of Regents.

The Board proceeded to the consideration of the resolutions reported yesterday by Mr. Choate, from the committee on the formation of a library, which were read and agreed to, as follows:

[No. 1.] *Resolved*, That it be recommended to the Secretary of the Smithsonian Institution forthwith to employ, subject to the approval of the Board of Regents, an assistant secretary, well qualified to discharge the duties of librarian.

[No. 2.] *Resolved*, That a committee be appointed, in conjunction with the Secretary, to prepare and submit to this Board extended lists of books, in the different departments of learning, proper to be first purchased, according to the general principles of this report; and, for this purpose, that they be authorized to request the aid of the librarian, and of other persons competent to afford it, and to engage to such person the honor of the Board for discretionary remuneration of such aid.

Mr. Choate, Mr. Hilliard, and Mr. Rush were appointed the said committee.

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On motion of Mr. Owen—

Resolved, That the salary of the Secretary, appointed under the 13th resolution reported by the Committee on Organization, and adopted by the Board on the 3d instant, be three thousand five hundred dollars per annum, to commence from the date of his acceptance of the office.

Resolved, That, until a permanent residence be provided for the Secretary in the buildings to be erected, a sum not exceeding five hundred dollars annually be appropriated to pay the rent of his residence.

On motion of Mr. Breese, the Board adjourned until to-morrow, at 10 o'clock, a. m.

December 5, 1846.

The Chancellor laid before the Board a letter from Walter R. Johnson, of the city of Philadelphia, tendering his services for the department of physical science, embracing philosophy and chemistry, with their applications; which was read and placed on file for future consideration.

The Chancellor also presented a letter from John Jay, of New York, accompanied by a recommendation of members of the Historical Society, of John Romeyn Brodhead as secretary of the institution; which was placed on file.

Mr. Bache presented a letter from B. F. French, of the city of New Orleans.

Mr. Owen offered the following resolution, which was read, considered, and agreed to, viz:

Resolved, That the Assistant Secretary cause one thousand copies of the journal of the Board of Regents, from the commencement of its organization to the close of this meeting, to be printed in the same form as the pamphlet already printed by this Board, and that he forward twenty-five copies thereof to each of the Regents.

Mr. Totten offered the following resolution, which was read, considered, and agreed to unanimously:

Whereas the present meeting of the Board may probably be the last at which the services of Mr. Hough, Regent from New York, as Secretary, will be required—

Resolved, That the thanks of the Board are respectfully offered to that gentleman for the prompt, valuable, and disinterested service he has rendered as Secretary.

On motion of Mr. Bache—

Resolved, That the Executive Committee be authorized to arrange with the Secretary the time and manner of the discharge of the duties enjoined on him by law, and by the resolutions of the Regents.

Resolved, That a committee of three be appointed by the Chancellor to procure the introduction, if they deem it expedient, of a bill amendatory of the act establishing this institution.

Mr. Owen, Mr. Hough, and Mr. Evans were appointed the said committee.

It having been suggested by Mr. Evans that in the minds of one or more of the Regents a doubt existed as to the passage of the resolution No. 7, in yesterday's proceedings, or whether it was not to be considered as among those postponed until the Board could

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meet again and avail itself of the advice of the Secretary elect, it was unanimously—

Ordered, That it be considered as among the postponed resolutions, and it was postponed accordingly until the next session.

On motion of Mr. Owen—

Resolved, That the Secretary of the Smithsonian Institution be entitled to participate in the deliberations of the Board of Regents, but without vote.

On motion of Mr. Evans—

Ordered, That when this Board adjourn to-day, it adjourn to meet on the second Wednesday of this month, at the room of the Vice-President of the United States, in the Capitol, at 11 o'clock, a. m.

The Board then adjourned accordingly.

December 9, 1846.

This being the second Wednesday of December, the Board of Regents met, pursuant to their resolution of the 9th day of September last, fixing their regular meetings.

Present: George M. Dallas, Chancellor; William W. Seaton, George Evans, Robert Dale Owen, A. D. Bache, William J. Hough, Richard Rush, and Joseph G. Totten.

The number fixed by the act establishing the Smithsonian Institution as a quorum being five, a quorum was in attendance.

At 11 o'clock a. m. the Chancellor took the chair, and called the Board to order.

Mr. Hough, from the committee appointed to wait on the President of the United States and the other persons named in the fourth section of the act to establish the Smithsonian Institution, and obtain their written consent to the selection and appropriation of the public reservation called the "Mall," west of Seventh street west, in the city of Washington, by the Regents, as a site for the necessary buildings for said institution, reported:

That on the fifth day of December instant he called upon the President of the United States and the other persons named in said fourth section of the act establishing said institution, and solicited their assent to the selection and appropriation by said Regents of all that portion of said reservation lying west of Seventh street west, in said city, as a site for the necessary buildings for said institution, pursuant to the resolution of the Board of Regents heretofore passed making such selection and appropriation, but that he was unable to obtain the consent of all of said persons, although a portion of them signified their readiness to give such consent; and that inasmuch as it seemed necessary that the assent of each and all of said persons be obtained to the validity of such selection and

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appropriation, the committee did not deem it of importance to obtain the written consent of such of said persons as signified their willingness to the same, not being able to procure the whole. The committee, therefore, submit the following resolution for the consideration of the Regents, and recommend the passage thereof.

The said resolution was then read and adopted, as follows:

Whereas the consent of all the persons named in the fourth section of the act to establish the Smithsonian Institution has not been obtained to the selection and appropriation of the public reservation called the "Mall," west of Seventh street west, in the city of Washington, by the Regents, as a site for the necessary buildings of said institution: Therefore,

Resolved, That a committee of three be appointed by the Chancellor to confer with the President of the United States and the other persons named in the fourth section of said act, and ask their consent to the selection by said Regents of that portion of said reservation lying between Seventh and Twelfth streets west, in said city, as the site for the necessary buildings of said institution; and, if such consent be given—

It is further resolved, That said buildings be located thereon, and at least two hundred and fifty feet south of the centre thereof.

Mr. Hough, Mr. Owen, and Mr. Evans, were appointed the said committee.

Mr. Seaton presented a communication from Mr. George Catlin, accompanied by a printed catalogue of his Indian Gallery, offering his collection of Indian memorials to the Smithsonian Institution, which was referred to the Committee on the formation of a Library.

On motion of Mr. Owen—

Ordered, That when this Board adjourn to-day, it adjourn to meet on Monday next, at 10 o'clock, a. m.

And then, on motion of Mr. Evans, the Board adjourned until Monday next, at 10 o'clock, a. m.

December 14, 1846.

The Chancellor laid before the Board the following letter, which was read:

COLLEGE OF NEW JERSEY, PRINCETON, *December* 7, 1846.

DEAR SIR: Your letter informing me of my election as Secretary of the Smithsonian Institution was received on Friday last; and, after a due consideration of its duties and responsibilities, I have concluded to accept the office.

With much respect, I am your obedient servant,

JOSEPH HENRY.

B. B. FRENCH, Esq.,
Secretary pro tem. Smithsonian Institution.

The Chancellor laid before the Board a communication from Ellis Lewis, of Lancaster, in the State of Pennsylvania, accompanied by a list of proof and other copies of rare works on engravings, and of engravings, etchings, &c., which he proposes to sell to the institution; which was read and referred to the Committee on the formation of a Library.

The Chancellor laid before the Board a communication from

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Francis Lieber, of Columbia, South Carolina, stating his views of the manner in which the institution should be conducted.

Mr. Seaton presented a letter from William A. Coleman, of the city of New York, relative to the furnishing of books to the institution; which was referred to the Committee on the formation of a Library.

Mr. Hough, from the committee appointed on the 9th instant to confer with the President of the United States and the other persons named in the fourth section of the act establishing the institution, made a verbal report, stating that the committee had had an interview with the President and the persons mentioned, but had come to no final conclusion as to the matter for which they were appointed.

On motion of Mr. Evans—

Ordered, That when this Board adjourn to-day it adjourn to meet on Monday next at 10 o'clock, a. m.

And then the Board adjourned until Monday next, at 10 o'clock, a. m.

December 21, 1846.

Chief Justice Taney, one of the Regents, appeared.

Joseph Henry, the Secretary elect of the Board of Regents and of the Smithsonian Institution, appeared, and entered upon the duties of his office.

Mr. Hough presented a letter from James R. Bartlett, of the city of New York, expressing a desire to be employed in aiding to carry into effect the ethnological department of the institution, not, as he states, "for the sake of any compensation," but for the interest he feels in ethnological science.

Mr. Hilliard presented a letter from Mr. LeBrun, of Philadelphia, an architect, asking if the furnishing of the plan for the buildings of the institution was open to competition. Mr. Hilliard stated that he had replied that it was understood that plans would be received by the Executive Committee until the 25th instant, from any person who saw fit to present them.

Mr. Hilliard presented a letter from Mr. Eli French, of the city of New York, tendering his services for the purchase of books for the institution.

Mr. Owen, from the committee appointed on the 9th instant to confer with the President of the United States and the persons mentioned in the fourth section of the act of Congress establishing the Smithsonian Institution, in relation to the location of

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the buildings of the institution, reported verbally that the committee had had an interview with those persons, but had not yet received their final decision upon the subject.

On motion of Mr. Owen—

Resolved, That when this Board adjourn to-day it adjourn to meet on Wednesday next, the 23d instant, at 10 o'clock, a. m.

On motion of Mr. Owen—

Resolved, That the report made by Mr. Owen, on the 1st day of December instant, from the Committee on the Organization of the Institution, together with the resolutions accompanying the same, which have not been agreed to by the Board, be recommitted to the said committee.

And then, on motion of Mr. Hilliard, the Board adjourned until Wednesday next, at 10 o'clock, a. m.

December 23, 1846.

Mr. Owen presented a letter from Professor D. P. Gardner, M. D., of the city of New York, accompanied by three printed papers written by him, viz:

1st. "The chemical principles of the rotation of crops," pronounced before the American Agricultural Association March 4th, 1846.
2d. "On the action of yellow light in producing the green color and indigo light the movement of plants."
3d. "The physical structure of plants."

And requesting that should the chairs of chemistry, vegetable physiology or agricultural chemistry be filled that he may be afforded an opportunity of referring the Regents to satisfactory authorities as to his qualifications as a public lecturer or teacher of those branches of science; which letter was read, the publications accepted, and placed in the library of the institution.

Mr. Hough, from the committee appointed on the 9th instant to confer with the President of the United States and the other persons named in the fourth section of the act establishing the Smithsonian Institution, and to ask their consent to the selection by said Regents of that portion of the public reservation called the "Mall," lying between Seventh and Twelfth streets, in the city of Washington, as the site for the necessary buildings of said institution, made a verbal report, accompanied by a copy of the preamble and resolutions adopted on the 9th instant, indorsed as follows, viz:

"The consent of all the persons named in the fourth section of the act to establish the Smithsonian Institution is not given to the site herein selected.

"JAMES K. POLK."

On motion of Mr. Owen—

Resolved, That the Regents of the Smithsonian Institution do select and appropriate, as the site for their buildings, the south half of so much of the "Mall," in the city of Washington, as lies between Ninth and Twelfth streets, if the consent of the persons named in the fourth section of the act of Congress establishing said institution be obtained thereto; and the said ground so selected shall be set out by proper metes and

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bounds, and a description of the same shall be made, and recorded in the book of records of the proceedings of the Board of Regents, and signed by the Regents.

On motion of Mr. Evans—

Ordered, That Mr. Hough, Mr. Owen, and Mr. Evans be a committee to communicate the said resolution to the President of the United States and the other persons named in the fourth section of the act establishing the Smithsonian Institution.

Mr. Seaton presented the application of Alexander B. McFarland for the appointment of superintendent of the masonry work of the buildings of the institution, accompanied by sundry letters recommendatory of his qualifications for that situation; which were referred to the Committee on Buildings.

On motion of Mr. Evans—

Ordered, That when this Board adjourn to-day it adjourn to meet on Wednesday, the 20th day of January next, at 10 o'clock, a. m.

And then, on motion of Mr. Evans, the Board adjourned until Wednesday, the 20th day of January next; then to meet at the room of the Vice-President of the United States, in the Capitol, at 10 o'clock, a. m.

January 20, 1847.

The Board of Regents met pursuant to their resolution of adjournment, adopted on the 23d day of December last.

Present, George M. Dallas, Chancellor; William W. Seaton, George Evans, Robert Dale Owen, William J. Hough, Richard Rush, Sidney Breese, Henry W. Hilliard, Alexander Dallas Bache, and the Secretary.

Hon. Lewis Cass, a Senator from the State of Michigan, appointed a Regent in the place of Hon. Isaac S. Pennybacker, deceased, appeared, and took his seat as a member of the Board.

Mr. Owen, from the committee appointed on the 23d of December last, to confer with the President of the United States and the other officers named in the fourth section of the act establishing the Smithsonian Institution, relative to the selection of a site for the building of the institution, made a report thereon, communicating the consent of the President of the United States and the other persons named in said fourth section, to the selection and appropriation of the site selected by the Regents.

Mr. Rush presented a letter from Clarke, Fynmore, and Fladgate, of the city of London, relative to Madame de la Batut, who receives an annuity from the Smithson estate, and communicating information of her being alive at the present time, and also the mode of obtaining information in relation to her.

Mr. Hough presented a letter from Daniel Lee, setting forth his

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peculiar fitness for the appointment of professor of agricultural chemistry, and requesting that such a professorship may be established, and he appointed to the chair thereof.

Mr. Bache presented sundry letters, recommending Titian R. Peale for the appointment of curator of the institution, to have charge of the museum of natural history.

The Chancellor presented the following letter from B. B. French, Assistant Secretary and librarian *pro tempore*, which was read:

WASHINGTON, *January* 19, 1847.

Hon. GEORGE M. DALLAS,
Chancellor of the Smithsonian Institution.

SIR: Since my last communication, relative to books received by me for the Smithsonian Institution, the following have been transmitted by the publishers in compliance with the tenth section of the act of Congress establishing the institution.

* * * * * * * * *

Respectfully, your obedient servant,

B. B. FRENCH,
Assistant Secretary and Librarian pro tem.

The Chancellor from the committee appointed on the 9th day of September last to select a plan for the building for the institution made a report thereon accompanied by the following resolutions:

1. *Resolved*, That the Norman plan of a building for the Smithsonian Institution, furnished by James Renwick, Jr., of New York, substantially as amended agreeably to the suggestions of the committee, is approved and adopted by this Board.

2. *Resolved*, That, as testimonials of the high sense entertained by this Board of the scientific merit and skill displayed in their respective plans, the following premiums be awarded to the gentlemen named:

To Messrs. Wells and Arnot - - -	$250
Mr. John Notman - - - -	250
Mr. John Haviland - - - -	250
Mr. Owen G. Warren - - - -	250

and that one thousand dollars be appropriated for that purpose.

3. *Resolved*, That the Secretary of the Board be instructed to write to each of the architects to whom are awarded premiums, informing them of the amount awarded, and that, if accepted, their plans will be retained by the institution; and also to each of the architects whose plans have not received premiums, informing them that their plans have not been accepted, and that they are at the disposal of their respective authors, and will be forwarded to them free of expense if desired, or at their option, retained by the institution.

4. *Resolved*, That a committee of three members of the Board, as provided for in the fifth section of the act of Congress, be appointed, who shall be empowered, on behalf of the Smithsonian Institution, to enter into contracts for the completion of the buildings, and to take security for their being finished according to the plan adopted by the Board, and within the time that may be stipulated; and that said committee have authority to employ one or more persons to superintend the erection of the buildings and the fitting up of the rooms of the institution.

The said report and resolutions were read, and the question being, Shall the resolutions pass?

On motion, it was—

Ordered, That the consideration thereof be postponed for the present.

The Chancellor presented a memorial of citizens of the District of Columbia, remonstrating against the use of the New York marble in constructing the building for the institution, if it is to be

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dressed, worked, and prepared by convicts in the State prison at Sing Sing, New York; which memorial was read.

Mr. Seaton presented a letter from Alexander Hunter, recommending J. Carroll Brent for an appointment under the Board of Regents; which letter was read.

Mr. Hilliard presented a letter addressed by John Notman, architect of Philadelphia, to the Board of Regents, relative to the description and estimate of the design submitted by him for the building for the Smithsonian Institution.

Several printed copies of the above letter were presented by Mr. Hilliard, and distributed to the members of the Board.

Mr. Owen presented a printed letter of Wells and Arnot, architects of New York, explanatory of their drawings for the buildings for the Smithsonian Institution and the estimate of the cost of the same.

Mr. Seaton offered the following resolution, which was read and agreed to:

Resolved, That all the architects who have presented plans for the consideration of the Building Committee be informed that the Board of Regents will hear any explanations they may desire to make in relation to their respective designs, to-morrow, at 10 o'clock, a. m.

On motion of Mr. Owen—

Ordered, That the daily hour of meeting shall be 10 o'clock, a. m., until otherwise ordered.

On motion of Mr. Owen, the Board adjourned until to-morrow, at 10 o'clock, a. m.

January 21, 1847.

Mr. Evans offered the following resolutions, accompanying them with remarks suitable to the occasion:

Resolved, That the Regents of the Smithsonian Institution have learned with profound sensibility that since their last meeting, the Honorable Isaac S. Pennybacker, late a member of this Board, has departed this life.

Resolved, That in testimony of their high respect for the memory of their late associate, the members of this Board will wear the customary badge of mourning for the period of thirty days.

Resolved, That these resolutions be entered upon the journal, and a copy of them be transmitted to the widow of the deceased.

The resolutions being read, were agreed to unanimously.

Mr. Evans presented a letter from A. E. Belknap, of Boston, Massachusetts, refuting charges in regard to the professional character of Josiah Rogers, of that city, as an architect.

The Chancellor presented a letter from the Secretary of the Senate, accompanied by a memorial presented to the Senate on the 20th instant, from residents of the District of Columbia, remonstrating against the use of materials prepared by State prison convicts in

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the construction of buildings for the Smithsonian Institution, transmitted to the Chancellor by order of the Senate.

Mr. Owen presented a letter from Mrs. E. M. Gurley, soliciting the appointment of librarian to the Smithsonian Institution for her husband, the Rev. R. R. Gurley; which was read.

Messrs. Haviland, Notman, and Arnot severally appeared before the Board in compliance with the resolution of yesterday, and explained their plans and drawings of the buildings for the institution.

On motion of Mr. Hough, the Board adjourned until to-morrow, at 10 o'clock, a. m.

January 22, 1847.

The Chancellor presented a letter from the Secretary of the Senate, accompanied by a memorial presented to the Senate on the 21st instant, from residents of the District of Columbia, remonstrating against the use of materials prepared by State prison convicts in the construction of buildings for the Smithsonian Institution, transmitted to the Chancellor by order of the United States Senate.

Mr. Arnot, architect, appeared before the Board of Regents, and completed the explanation of his plan for the building.

Messrs. Rogers, Renwick, and Archer severally appeared before the Board, and explained their plans and drawings of the buildings for the institution.

The sitting of this day was principally occupied in hearing the explanations of the architects of their respective plans.

On motion, the Board adjourned until to-morrow, at 10 o'clock, a. m.

January 23, 1847.

Mr. Choate, one of the Regents, appeared.

Mr. Mills, architect, appeared before the Board, in compliance with the resolution of the 20th instant, and explained his plans and drawings of the building for the institution.

The Chancellor presented a letter from Thomas L. Smith, Esq., late Register of the Treasury, requesting the appointment of treasurer and recording secretary of the institution.

Mr. Rush presented a letter from Hon. James Buchanan, recommending Mr. Robert W. Burrows for some employment by the Smithsonian Institution. Mr. Rush added his own favorable recommendation of Mr. Burrows for the place asked for.

The Board proceeded to the consideration of the 1st resolution reported by the Chancellor from the committee on the selection of a plan for the building on the 20th instant, which is as follows:

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[No. 1.] *Resolved*, That the Norman plan of a building for the Smithsonian Institution, furnished by James Renwick, Jr., of New York, substantially as amended, agreeably to the suggestions of the committee, is approved and adopted by this Board.

Mr. Dallas, Mr. Cass and Mr. Breese severally read propositions of amendment which they intend to offer at a proper time.

After debate, the Board adjourned until Monday next, at 10 o'clock, a. m.

January 25, 1847.

The Chancellor presented a letter from John P. Todd, offering on the part of Mrs. Madison and himself some immense blocks of marble obtained from the "Montpelier Quarry," in the State of Virginia, for the use of the Smithsonian Institution.

Also a letter from Charles Fraber, soliciting the appointment of messenger to the Board of Regents.

Also a letter from the Honorable Reverdy Johnson, inclosing a memorial of R. Cary Long, architect of Baltimore, Maryland, praying for the publication of an invitation to all architects to forward plans and drawings for the building of the Smithsonian Institution before they decide upon such plans.

Also a letter from Theodore Frelinghuysen, soliciting the appointment of librarian for Rev. R. R. Gurley.

Also a letter from John Haviland, respecting the plans and estimates heretofore submitted to the Board of Regents by him for the building for the institution, and reducing the same to meet the present wants of the institution.

Also a letter from John McArran, soliciting the appointment of gardener to the Smithsonian Institution.

Mr. Bache informed the Board of Regents that he had received a letter from C. F. Hagedorn, consul general of Bavaria, communicating the fact that a valuable library of thirty thousand volumes belonging to Count Haptedton, of Munich, was for sale.

Mr. Owen, from the Committee on Organization, to which was recommitted, on the 21st of December last, the report made by Mr. Owen on the 1st of December last, together with such of the resolutions accompanying the same, as had not been agreed to by the Board, reported back the same in an amended form, accompanied by sundry resolutions; which report and resolutions were laid upon the table.

Mr. Choate offered sundry resolutions in relation to the organization of the institution; which were read and laid upon the table.

The Board took a recess until 1 o'clock, p. m.

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Same day, 1 *o'clock, p. m.*

The Board met and proceeded to the further consideration of the first resolution reported by the Building Committee on the 20th instant.

And, after debate—

Ordered, That when this Board adjourn to-day it will adjourn to meet at half past nine o'clock, a. m., to-morrow.

The Board then adjourned until to-morrow, at 9½ o'clock, a. m.

January 26, 1847.

The Chancellor submitted the following resolutions, which were read and laid upon the table for the present:

Resolved, That in view of the vast field of knowledge, to the increase and diffusion of which the act of Congress directs the efforts and funds of the Smithsonian Institution, this Board deem it inexpedient and hazardous to appropriate to the erection of a building a larger sum than one hundred thousand dollars.

Resolved, That John Haviland, of Philadelphia, architect, be requested to state in writing, formally to this Board, whether he will undertake to erect a building, upon the model of the central structure he has already planned and furnished to this Board, with slight changes of arrangement, which will embrace all the chief objects expressed in the act of Congress, for the sum of one hundred thousand dollars; said building to be of granite or sandstone.

Resolved, That the committee of three hereinafter appointed be authorized to confer with Mr. Haviland, and that, upon this Board receiving from him the written and formal undertaking mentioned in the foregoing resolution, they be authorized to engage his services as architect for the execution of his plan, and to complete all the necessary contracts.

The Board proceeded to the consideration of the series of resolutions offered by Mr. Choate yesterday in relation to the organization of the institution.

After debate, the question was stated on the adoption of said resolutions, when Mr. Breese moved that the words "an essential" be stricken out, and that in lieu thereof, the words "*the most prominent*" be inserted; which was decided in the negative.

The said first resolution was then agreed to.

The Board proceeded to the consideration of the second, third, fourth, fifth, and sixth of the said series of resolutions, and, after debate, they were agreed to.

The question was stated on agreeing to the seventh of said series of resolutions, when Mr. Hough moved that the words "one-half," in the first branch of said resolution, be stricken out, which was decided in the negative; and the resolution was then agreed to.

And so the series of resolutions were agreed to, as follows:

1. *Resolved*, That it is expedient, and demanded by the will of the testator, that in our plan of organization the increase of knowledge by original research should form an essential feature; that in furtherance of this object, premiums be offered, at such times and to such amounts as the Board may hereafter decide, for original papers,

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containing positive additions to the sum of human knowledge; and that these, together with other suitable papers, be published in transactions of the institution, to be entitled "Smithsonian Contributions to Knowledge," and to be published periodically or occasionally, in quarto form, as materials may be obtained.

2. *Resolved*, That it is within the strict purpose of the trust, and may materially advance its legitimate objects, occasionally to make specific appropriations to definite lines of research, the results to be published as above.

3. *Resolved*, That, with a view to the diffusion of knowledge, there may be properly included in the plan of organization the issuing of publications, in brief and popular form, on subjects of general interest.

4. *Resolved*, That, with a similar object, there may also properly be included in the plan of organization the issuing of periodical reports containing records of the progress of knowledge in its different branches.

5. *Resolved*, That there may also properly be included in the plan free lectures, to be delivered by competent persons, on useful subjects; and that it may advantageously be made a part of the duty of the Secretary and his assistants to give in the lecture rooms of the institution, at stated periods, illustrations of new discoveries in science and important inventions in the arts.

6. *Resolved*, That it is the intention of the act of Congress establishing the institution, and in accordance with the design of Mr. Smithson, as expressed in his will, that one of the principal modes of executing the act and the trust is the accumulation of collections of specimens and objects of natural history and of elegant art, and the gradual formation of a library of valuable works pertaining to all departments of human knowledge, to the end that a copious storehouse of materials of science, literature, and art may be provided, which shall excite and diffuse the love of learning among men, and shall assist the original investigations and efforts of those who may devote themselves to the pursuit of any branch of knowledge.

7. *Resolved*, That for the purpose of carrying into effect the two principal modes of executing the act and trust pointed out in the resolutions herewith submitted, the permanent appropriations out of the accruing interest shall, so soon as the buildings are completed, be annually as follows, viz:

First, for the formation of a library composed of valuable works pertaining to all departments of human knowledge, and for the procuring, arranging, and preserving of the various collections of the institution, as well of natural history and objects of foreign and curious research and of elegant art as others, including salaries and all other general expenses connected with the same, excepting those of the first complete arrangement of all such collections and objects as now belong to the United States in the museum of the institution, when completed, together with one-half of the salary of the Secretary, the sum of fifteen thousand dollars.

Second, for the preparation and publication of transactions, reports, and all other publications of the institution, including appropriations for original researches and premiums for original papers; for the delivery of all lectures and payment of all lecturers, and for all general expenses connected with said lectures and publications, together with one-half of the salary of the Secretary, the remainder of the annually accruing interest; it being understood that all general and incidental expenses not specially connected with either of the above two great divisions of the plan of the institution shall be equally divided between them.

Mr. Bache offered the following resolutions; which were read, considered, and agreed to:

Resolved, That the Secretary of the Smithsonian Institution be instructed to present to the Committee of Organization a plan for executing the resolutions relating to Smithsonian contributions, to annual reports and other publications, to premiums, and to original researches.

Resolved, That said committee, in conjunction with the Secretary, be authorized to publish in quarto form a number of the Smithsonian Contributions to Science, as soon as suitable materials are collected for the same, of which the Secretary and committee shall judge, provided that the expense thereof shall not exceed one thousand dollars; which sum is hereby appropriated to that object from the income of the institution for the year 1847.

Resolved, That the Chancellor of the Smithsonian Institution be requested to prepare a biographical notice of James Smithson for the first number of the contributions.

Resolved, That the Secretary of the Smithsonian Institution be requested to continue his researches in physical science, and to present such facts and principles as may be developed, for publication in the Smithsonian Contributions.

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Resolved, That the Secretary of the Smithsonian Institution be authorized and requested to communicate with men eminent in science and literature, and to ask their advice, in behalf of the institution, in regard to the subjects for which premiums shall be offered, and upon which reports and essays shall be prepared.

Resolved, That the Committee on Organization present, for the approval of the Board at its next meeting, the details of the plans which they may recommend, in pursuance of the foregoing, for the increase and diffusion of knowledge among men.

Mr. Hilliard offered the following resolutions; which were read, and, after debate, agreed to:

Resolved, That the salary of the Assistant Secretary, acting as librarian, shall be two thousand dollars.

Resolved, That the Secretary be requested now to nominate to the Board an assistant, who shall be the librarian, and whose salary shall commence whenever the building shall be ready for the reception of the library.

Resolved, That for any service rendered by him from this time, in collecting books, making catalogues, &c., he shall receive such compensation as the Executive Committee may deem reasonable.

Whereupon the Secretary remarked, that, understanding Professor Charles C. Jewett, of Brown University, to be the preference of a majority of the Board, he, therefore, nominated Charles C. Jewett for Assistant Secretary, acting as librarian, of the Smithsonian Institution.

Mr. Evans offered the following resolution; which was read and agreed to:

Resolved, That this Board do approve the nomination of Charles C. Jewett, and consent to his employment as Assistant Secretary, to act as librarian.

The Chancellor having withdrawn, Mr. Seaton took the chair as Chancellor *pro tem.*

The Chancellor presented to the Board a letter from the Hon. Richard Rush, one of the Regents, stating his regret that an indispensable engagement made it necessary that he should be absent from the meeting of the Board, and approving of Mr. Renwick's plans and drawings for the building.

The Board proceeded to the consideration of the report of the Building Committee, when Mr. Owen presented a proposition relative to the estimates for the cost of the building.

After debate, the whole subject was postponed until to-morrow.

On motion of Mr. Owen—

Ordered, That when the Board adjourn it will adjourn to meet to-morrow, at half past nine o'clock, a. m.

The Board then adjourned.

January 27, 1847.

Mr. Choate presented a letter from Charles H. Hill, of the city of New York, calling the attention of the Board of Regents to the quality of the marble of the quarries at West Stockbridge, Berkshire county, Massachusetts, and offering to furnish any quantity of

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the same or contract to erect the necessary buildings of that material and give the required security for the fulfillment of the contract; which was read and laid on the table.

Also, a letter from Isaiah Rogers, explaining the plan and drawings for the building for the institution, submitted by him; which was read and laid upon the table.

Mr. Bache offered the following resolution:

Resolved, That in the opinion of the Board of Regents of the Smithsonian Institution it is unnecessary and inexpedient to expend, in erecting a building to meet the requirements of the act creating the establishment, from the principal of the fund of two hundred and forty-two thousand one hundred and twenty-nine dollars referred to in the first section of the act, a sum exceeding one hundred thousand dollars.

Which was read, and the further consideration thereof postponed for the present.

The Board proceeded to the consideration of the first of the resolutions appended to the report of the committee on the plans of a building; when the Chancellor offered as an amendment to the same the first of the series of resolutions offered by him yesterday.

Mr. Bache offered as an amendment to the amendment the following proviso:

Provided, That a plan of finance and construction can be adopted which will not expend more than one hundred thousand dollars of the principal of the fund of two hundred and forty-two thousand one hundred and twenty-nine dollars, referred to in the first section of the act of Congress establishing the Smithsonian Institution, which plan the Building Committee is hereby instructed to present to the Board for consideration and adoption.

Mr. Owen gave notice of an additional resolution which he should offer when the same should be in order. After debate the whole subject was postponed until a meeting of the Board this evening.

On motion of Mr. Breese—

Ordered, That the Board of Regents take a recess until half-past seven o'clock this evening.

The Board then took a recess accordingly.

Same day, 7½ o'clock, p. m.

The Board resumed its session.

Mr. Choate presented a letter from G. S. Bulfinch, offering in behalf of himself and his brothers, to sell to the Smithsonian Institution the architectural library of Charles Bulfinch, deceased, which was laid upon the table.

The Board then adjourned until to-morrow at 10 o'clock, a. m.

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January 28, 1847.

On motion of Mr. Seaton, the Board of Regents proceeded to the consideration of the resolutions submitted by the Committee on the plan of the building.

After debate, on motion of Mr. Owen—

Ordered, That the said resolutions be laid upon the table.

Mr. Owen offered the following resolutions; which were read, considered and agreed to:

Resolved, That the Norman plan of a building for the Smithsonian Institution, furnished by James Renwick, jr., of New York, substantially as amended and reduced agreeably to the suggestions of the committee, is approved by this Board.

Resolved, That a building committee of three members of the Board, as provided in the fifth section of the act of Congress, be appointed, who are hereby authorized and empowered, on behalf of the Smithsonian Institution, to enter into contracts for the completion of the buildings; and that said committee have power to employ one or more persons to superintend the erection of the buildings and the fitting up of the rooms of the institution; and that the work shall be done to the entire satisfaction of the said superintendent or superintendents; and that the said superintendent or superintendents shall have power, and shall be required, to reject any of the material proposed to be employed, and also to object to inferior or insufficient work, and to direct its change, at his or their discretion.

Resolved, That in the performance of the duty intrusted to them, the building committee of three hereinbefore referred to shall give the contracts to the lowest bidder of good reputation, who shall give unexceptionable security, to the entire satisfaction of the committee, for the performance of said contracts; and such security shall in all cases be taken. No advance shall in any case be made; and fifteen per cent. of all payments shall be retained until the faithful performance of the work.

Resolved, That the Building Committee, after taking counsel with the Secretary, shall carefully revise the specifications of the plan furnished to this Board by the architect, before entering into any contract; and if, after such examination, they shall be of opinion that any modifications of the said plan and specifications are necessary for the safety, durability, or better adaptation of the structure, they may incorporate these in the said specifications; but no addition to the dimensions of the building shall be made, nor any ornament of any kind added; and the said modifications shall have sole reference to the safety, durability, and adaptation of the building. And the whole amount of the contract for the said building, including the modifications above provided for, shall, under no circumstances, exceed the amount of the original estimates of the architect, to wit: the sum of two hundred and two thousand dollars, with a percentage not exceeding ten per cent. on the said sum.

Resolved, That the Building Committee be also authorized to contract for the warming and lighting of the building; provided that the contract for the above objects shall not exceed five thousand dollars.

Resolved, That the Building Committee be also authorized to contract for the fitting up and furnishing of the building of the institution; provided that the contract for the same shall not exceed twenty thousand dollars.

Resolved, That the Building Committee be also authorized to contract for a permanent fence around the ground belonging to the institution; provided that the contract for the same shall not amount to more than ten thousand dollars.

Resolved, That the Secretary of the institution be authorized to contract for the necessary chemical and philosophical apparatus, for which an appropriation of four thousand dollars has heretofore been made.

Resolved, That the Building Committee be authorized to contract for the grading, laying out, and planting of the grounds of the institution; and that three thousand dollars, in addition to the one thousand dollars heretofore appropriated, be, and the same is hereby, appropriated for that purpose.

And it being on the one hand desirable that a portion of the buildings to be erected by the institution be ready for use at an early day, and on the other hand it is essential to the solidity and durability of a structure of the size required to embrace all the objects specified in the act of Congress, that its erection be gradual and not too rapidly hastened forward: Therefore—

Resolved, That the Building Committee be instructed to arrange the contracts for

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the buildings of the institution so that the wings of said buildings may be completed in two years from the present time, and the whole completed in five years.

Mr. Owen offered the following resolution:

Resolved, That the Executive Committeee certify to the Chancellor and Secretary of the Board the total amount of debts incurred, contracts entered into, and contracts authorized by the Board; and that the Chancellor and Secretary, after examination and approval of the same, certify the same to the proper officer of the Treasury for payment.

The said resolution was read; when Mr. Evans moved to amend the same by adding thereto the following, as an additional resolution:

Resolved, That the Executive Committee be authorized to receive said payment in Treasury notes payable to the order of the Chancellor of the Smithsonian Institution in one year from date, bearing an interest of six per cent. per annum; and that they be further authorized to exchange one hundred and fifty thousand dollars of said notes as soon as practicable for an equal amount of six per cent. stock of the United States, payable in twenty years, which stock shall also be payable to the Chancellor of the institution; which said notes and stock shall be deposited for safe keeping only with the Treasurer of the United States, or such other person as they may deem proper, to be drawn out only upon checks or warrants signed by the Chancellor, the Secretary, and the chairman of the Executive Committee.

The said amendment was agreed to; and the said resolution as amended was agreed to.

Mr. Owen offered the following resolutions; which were read, considered, and agreed to:

Resolved, That it is the opinion and intention of the Board that, in the appropriation for the objects of the institution of any surplus of accrued interest which may remain after the completion of the buildings of the institution, an equal division shall be made between the two great branches; that is to say, one-half shall be appropriated to the library and museum fund, and the other half to the fund for original research, publications, and lectures; and that, in regard to all other funds hereafter to accrue to the institution, the same division be made.

Resolved, That the Building Committee be instructed, in the arrangement of the buildings, to extend the gallery of art throughout the western range and western wing; and to arrange two lecture rooms, and no more, in the building. Temporary arrangements shall be made to receive in the west wing of the building the library of the institution until the library proper be completed.

Resolved, That the Building Committee, in conjunction with the Secretary, be authorized to publish, in the same form as the Transactions of the Society, one thousand copies of a small volume containing so many of the plans proposed for the buildings of the institution that have been submitted to the Board, and may remain its property, as the committee may deem worthy of publication, accompanying the same with a brief narrative of proceedings in regard to these plans and a brief description and explanation of each plan, the said description and explanation, so far as they specially regard each plan, to be submitted before publication to the respective architects, the said volume to include engraved ground plans, elevations, and, at the option of the committee, perspective views, the plans to be reduced to the proper size for publication by each architect, and to be executed in the best style of art: *Provided*, That the entire expense shall not exceed two thousand dollars; which sum is hereby appropriated for that object.

And the said committee shall place at the disposal of each architect who has furnished plans to the Board, whether the said plans have received premiums or not, twelve copies of said volume.

Mr. Seaton offered the following resolutions, which were read:

1. *Resolved*, That the Building Committee invite separate proposals for the principal descriptions of work requisite for the erection of the building, to wit: the masonry, carpentry, plastering, painting, and glazing, and enter into contract with different persons for these several branches of work, requiring the proper security from each contractor, so that the responsibility for the erection of the whole building shall not be committed to one person.

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2. *Resolved*, That the Building Committee invite proposals for the construction of the exterior walls of the building of upper Potomac sandstone, of marble, of granite, and of blue gneiss, respectively, and adopt that one of these four named materials which shall be deemed to combine the requisites of cheapness, beauty, and durability.

The question was put, Shall the first of the said resolutions pass? and was decided in the negative.

The question was then put, Shall the second of the said resolutions pass? and decided in the affirmative.

The Chancellor presented a letter from Jeremiah Sullivan, offering to the Board of Regents his services as a superintendent of any branch of masonry or cut stone work; which letter was referred to the Building Committee.

Also a letter from William Struthers, of Philadelphia, informing the Board of Regents that D. O. Hitman, of Montgomery county, Pennsylvania, had sent him specimens of blue marble which he was anxious to have used for the construction of the building for the Smithsonian Institution; which letter was referred to the Building Committee.

On motion of Mr. Hough, the Board proceeded to the consideration of the second of the resolutions of the committee on the plan of the building, submitted on the 20th instant.

And after debate, the question was put, Shall the resolution pass? and decided in the affirmative.

The Board proceeded to the consideration of the third resolution submitted by the said committee; and, after debate, the said third resolution was agreed to.

On motion of Mr. Evans, the Board then adjourned until Saturday next, at 10 o'clock, a. m.

January 30, 1847.

Mr. Bache moved to reconsider the vote by which the resolution for the publication of the plans for the building was adopted, and by general consent the consideration of said motion was postponed for the present.

The Chancellor presented a letter from Peter Gorman, containing the prices at which he will furnish stone for the building; which letter was read and referred to the Building Committee.

Also a letter from John B. Glover, offering to furnish marble for the building at a price that shall just cover cost; which letter was read and referred to the Building Committee.

Also a memorial of John Haviland and others, architects, remonstrating against the inequality of the premiums awarded to the arch-

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itects, and the sum appropriated for the publication of the designs; which was read and laid upon the table.

Also a bill of the expenses of Isaiah Rogers, in preparing plans, drawings, and specifications and estimates; which was referred to the Executive Committee, with instructions to examine and report upon the same.

Mr. Bache presented a letter from C. F. Hagedorn, Consul General of Bavaria, giving some of the details of a valuable library, now for sale in the city of Munich; which letter was laid upon the table.

Mr. Evans offered the following resolution:

Resolved, That it is expedient that an assistant to the Secretary be appointed, who shall also be the clerk of the building and executive committees, who shall take charge of the rooms which may be obtained for the use of the institution; who shall assist the Secretary when required in keeping the records of the institution, keep accounts and papers of the Secretary and of the Building Committee; who shall be competent to prepare all public advertisements, draw all contracts, keep all accounts of disbursements, prepare all accounts for settlement at the Treasury, and discharge such duties generally connected with the institution as may be required of him by the Secretary or the Building Committee; and who shall receive such compensation as shall hereafter be fixed upon by the Board.

The resolution being read, the further consideration thereof was postponed for the present.

Ordered, That when this Board adjourn it adjourn to meet at 10 o'clock, a. m., on Friday next.

The Board then adjourned accordingly.

February 5, 1847.

On motion of Mr. Owen, the Board proceeded to the consideration of the motion made by Mr. Bache on the 30th of January last, to reconsider the vote by which the resolution authorizing the publication of the plans and estimates for the building for the institution was agreed to, and, after debate, the motion to reconsider was agreed to.

The question then recurring on the adoption of the resolution, Mr. Bache offered the following amendment as a substitute therefor; which was read and agreed to, viz:

Resolved, That the Building Committee, in conjunction with the Secretary, be authorized to publish, in such form as they may deem most appropriate, one thousand copies of a brief treatise, to be entitled "Hints on Public Architecture," and to be illustrated with designs of the plan of the building adopted for the Smithsonian Institution, and, at the option of the committee, with any other designs that are the property of the institution, provided that the cost of the same shall not exceed one thousand dollars, which sum is hereby appropriated for that purpose.

The question was then put on the adoption of the resolution as amended, and it was decided in the affirmative.

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Mr. Owen offered the following resolution, which was read, considered, and agreed to, viz:

Resolved, That the Secretary add to the report of the Organization Committee, when printed, a copy of the will of the testator, of the act accepting the bequest, and of the act organizing the institution.

On motion of Mr. Evans, the Board proceeded to the consideration of the resolution offered by him on the 30th of January last, providing for the appointment of an assistant to the Secretary for the performance of certain duties specified in the said resolution. The resolution was read, considered, and agreed to.

On motion of Mr. Evans, the Board proceeded to the appointment of the "committee of three," in accordance with the fifth section of the act organizing the institution, and Messrs. Joseph G. Totten, Robert Dale Owen, and William W. Seaton, were appointed the said committee.

On motion of Mr. Hilliard—

Ordered, That Mr. A. D. Bache be appointed temporarily on the Executive Committee, in the place of Mr. J. G. Totten, who is now in Mexico.

Ordered, That Mr. William J. Hough be appointed temporarily in the place of Mr. J. G. Totten on the Building Committee.

On motion of Mr. Evans—

Resolved, That in the absence of any member of a committee, the remaining members thereof be authorized to appoint one temporarily in his stead.

The Secretary presented a letter from John Notman, requesting the early action of the Board of Regents upon his bill for professional services in drawing plans, and making estimates, for the building for the institution.

Whereupon the Chancellor offered the following resolution, which was read, considered, and agreed to, viz:

Resolved, That the letter of Mr. John Notman, submitted this day to the Board, be referred to a committee consisting of Mr. Owen and Mr. Hough, with instructions to report in writing thereon, especially in reference to the details of any engagement or understanding heretofore entered into with the architects, respecting the plans to be furnished to the Board, and remuneration therefor.

Mr. Hilliard presented a letter from Hon. William C. Preston, of South Carolina, withdrawing his resignation; which letter was read and laid on the table.

Mr. Owen submitted the following resolution:

Resolved, That the sum of two hundred and fifty dollars be paid by the Executive Committee to Mr. Isaiah Rogers, of Boston, architect, in full remuneration for plans submitted by him to the Board.

Which resolution, on motion of Mr. Evans, was referred to the same committee to whom the letter of Mr. John Notman was, this day, referred.

On motion of Mr. Evans, the Board then adjourned *sine die*.

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February 17, 1847.

The Board of Regents met at 10 o'clock, a. m., pursuant to the resolution of organization.

Present, Mr. Dallas, (Chancellor,) Mr. Seaton, Mr. Hough, Mr. Owen, Mr. Bache, Mr. Hilliard, Mr. Evans, and Mr. Rush.

The Secretary presented the following letter from C. C. Jewett, accepting the appointment of Assistant Secretary, to act as Librarian; which was read and laid upon the table:

PROVIDENCE, *February* 11, 1847.

JOSEPH HENRY, LL.D.,
Secretary of the Smithsonian Institution.

DEAR SIR: I had the honor to receive, last Saturday, your letter, dated January 30, informing me of my appointment as Assistant Secretary, to act as Librarian of the Smithsonian Institution.

I have, after due deliberation, concluded to accept the office.

Begging you to receive my thanks for the nomination, I am, with great respect, your obedient servant,

C. C. JEWETT.

The Chancellor presented the resolution of the Legislature of the State of Ohio recommending the employment of James Russell, to construct a planetarium for the use of the Smithsonian Institution to be a national monument of the great mind of the inventor and of the munificence of the founder; which was referred to the Committee on the Library.

Mr. Hough presented a letter from Ward B. Howard, offering to contract to furnish granite for the building for the institution from his quarry on the east bank of the Hudson river; which was referred to the Committee on the Building.

Mr. Seaton presented a letter from Henry Stockton, of the city of New York, offering to lithograph the plans and drawings for the building of the Smithsonian Institution; which letter was referred to the Building Committee.

Also a letter from Hon. J. Phillips Phœnix, recommending the employment of P. Naylor, of the city of New York, in roofing the building for the institution; which letter was referred to the Building Committee.

Also a letter from R. R. Gurley, recommending the purchase of Catlin's gallery of Indian paintings; which letter was referred to the Committee on the Library.

Mr. Owen offered the following preamble and resolutions; which were read, considered, and agreed to, viz:

Whereas a bill has been introduced into the Senate of the United States, relative to the site of the Smithsonian Institution.

Resolved, That if, in virtue of the provisions of the said bill, any change in the present site of the institution be made, all the contracts heretofore authorized by the Board in regard to building, laying out the ground, fencing, &c., shall be and remain in

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full force, and shall apply to any new site that may be selected, in the same manner as the same now apply to the site in the possession of the institution.

Resolved, That a copy of the foregoing resolution be forthwith communicated to the Secretary of the Treasury of the United States by the Secretary of the Smithsonian Institution.

On motion of Mr. Hough—

Ordered, That when this Board adjourn it adjourn to meet on Saturday next, at 10 o'clock, a. m.

The Board then adjourned accordingly.

February 20, 1847.

Mr. Owen, from the sub-committee, to whom were referred the letter of Mr. Notman, architect, and a resolution regarding the remuneration of Mr. Rogers, architect, reported as follows:

The undersigned, a sub-committee, of the committee appointed on the 9th of September last to take such measures as may be deemed by them most proper to obtain plans for the erection of buildings for this institution, and to whom have been referred resolutions relative to the remuneration of Mr. Isaiah Rogers, architect, of Boston, and of Mr. John Notman, architect, of Philadelphia, for plans submitted by them, report as follows:

In visiting, in September last, the principal Atlantic cities, and communicating with architects of reputation there, they were acting under the resolution of the Board of the above date, instructing them to visit any structures and collections in this country, and also to avail themselves of the suggestions of skillful architects, and to offer therefor, if necessary, such remuneration as the Regents may choose subsequently to make.

In the first instance as it seemed doubtful whether applications would be spontaneously made by architects to them, they decided to apply to three, to wit: one in Philadelphia, John Notman; one in New York, James Renwick, Jr.; and one in Boston, Isaiah Rogers. They submitted to each of these architects plans of building, which had previously been placed at the disposal of the Board, informed them what modifications in regard to the internal arrangements of the plan were considered necessary by the committee; and added that if they felt disposed to prepare and submit to the Board plans for the building of the institution, adopting some style of architecture of a simple character and without unnecessary ornament, they might do so, provided they were willing to trust wholly to the Board for the amount of remuneration. It was expressly and most distinctly stated by the undersigned to each one of these three architects, that they (the undersigned) had no authority to offer or promise any specific remuneration; and that, if plans were furnished, the architect furnishing them must trust wholly to the Board for the amount of remuneration. So far as the undersigned can learn, each of the architects above referred to admit this.

As regards all the other architects, they stand on a different footing from the three named, for all the others applied to the undersigned, not the undersigned to them; and to all of them it was expressly stated that, if they furnished plans, it would rest with the Board whether they would accept or pay for them at all. If not paid for, the promise was made that no use whatever should be made of them, nor any hint borrowed from them.

Thus, the three first-named architects stand on a different footing, as the undersigned think, from the others. Some remuneration is justly due to each, but the amount is entirely optional with the Board. As regards Mr. Renwick, his plan has been adopted. As regards Mr. Notman, two hundred and fifty dollars have already been voted to him—full remuneration for his plan, as the undersigned think, and therefore they recommend the passage of the resolution in his case. Mr. Rogers' case alone remains, and the undersigned, in view of the resolution under which the subcommittee were acting, in referring plans to, Mr. Rogers, recommend the passage of the resolution referred to them, that two hundred and fifty dollars be paid to him in full remuneration for plans furnished.

All which is respectfully submitted,

ROBERT DALE OWEN,
WILLIAM J. HOUGH.

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The following resolutions accompany the foregoing report, viz:

Resolved, That the sum of two hundred and fifty dollars be paid by the Executive Committee to Mr. Isaiah Rogers, architect, of Boston, in full remuneration for plans submitted by him to the Board.

Resolved, That the Secretary be requested to inform Mr. John Notman, of Philadelphia, architect, in reply to his letter, that the Board understood him as offering his plans in competition with the other architects, and as such, awarded him a premium; that, being informed by him that he considered himself, as requested by the Building Committee, to furnish a plan to the Board, trusting to the Board for the amount of remuneration; they have again carefully examined his plans, and have decided that the sum of two hundred and fifty dollars, which the chairman of the Executive Committee has heretofore been authorized to pay Mr. Notman in full for his plan, be paid to Mr. Notman, on demand, as remuneration for his plan, on receiving from him a receipt in full.

The question being put, Shall the resolutions pass?

It was decided in the affirmative.

On motion of Mr. Hough, the Board adjourned until Wednesday next, the 24th instant, at 10 o'clock, a. m.

February 24, 1847.

The committee appointed on the 5th December last, to "procure the introduction, if they deem it expedient, of a bill amendatory of the act establishing this institution," submit, as the best explanation of their proceedings, the following communication addressed by them to the editor of the *Union*, and published in that paper of the 15th February:

To the Editors.

SIR: The undersigned, appointed by the Board of Regents of the Smithsonian Institution, a committee to "procure the introduction into Congress, if they deem it expedient, of a bill amendatory of the act organizing the institution," have, in discharging the duty assigned them, had brought under their consideration the subject treated of in an editorial published in the *Union* of February 11. And they beg leave to offer, in reply, a few remarks and a brief statement of their intentions in the premises.

The Building Committee of the Smithsonian Institution have already exonerated the Board from all responsibility connected with the selection of a site on the Mall in preference to one in the populous portion of the city; no choice being in fact left to the Board, since no suitable unoccupied square is to be found on the entire plan of the city this side of the canal; and, with no other powers than those contained in the act organizing the institution, no site already occupied could be purchased by the institution.

There is a site the most eligible, probably, in the city, for our institution—that of the present City Hall. It has been represented to the undersigned that it would be most desirable, on the score of public convenience, if it could be procured. They concur in this opinion. In the immediate vicinity of the principal hotels and boarding houses, comprising an eminence whence the ground gradually falls off in all directions, in a healthy portion of the city, utility and appearance would be equally consulted in selecting it. But it is in the occupation of the city, and, while the present building remains upon it, it can properly receive no other public edifice. Without the concurrent action of Congress and of the City Corporation it cannot be obtained as a site for the Smithsonian Institution.

The undersigned, however, having had their attention called to this subject not only by the article to which they are replying, but by other similar representations, after maturely considering the subject, have resolved to endeavor to obtain such concurrent action. They examined the plan of the present City Hall, the same of which a model now stands in the corridor of that hall, and of which the building now

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erected is but a small part; and that, too, unfinished, inconvenient, and unsightly. They ascertained that this fraction of the plan, bald and gloomy as it is, adapted to receive expensive porticoes and steps on three of its sides, (no portions of which, during the quarter of a century it has stood, have been attempted,) has cost ninety thousand dollars; and they found the estimate for its completion to be three hundred and ten thousand dollars more. That it will ever be completed, no one believes. Congress will not, and the city cannot, furnish the means. To give even to the fraction that now stands a decent or reputable finish, would cost fifty or sixty thousand dollars; and though its present dilapidated condition—most discreditable both to the city and the Government—may seem loudly to demand some action, yet it is doubtful whether Congress will ever expend that amount on so unpromising and expensive an object.

Nor is the present shell, great as has been its cost, profitable any more than ornamental. It brings little or no revenue to the city. In view of these circumstances, the undersigned came to the conclusion that a sum, say of fifty thousand dollars, would probably be a sufficient inducement to the city authorities to abandon a building they can never hope to complete, and which, unfinished as it stands, is an eyesore and a reproach; inasmuch as with that sum they could put up, on the Centre Market space, a plain building sufficient to afford, in its upper story, the accommodations required as well by the United States circuit court and its officers, as by the city authorities, while its lower story might furnish market stalls and stores that would rent for many thousand dollars annually.

The undersigned were also of opinion that, considering the advantages of the City Hall site to the Smithsonian Institution, so far as regards its usefulness in connection with its library, its collections, and its lectures, the institution might properly and prudently give for the materials of the City Hall their full value—say fifteen thousand dollars.

If these views be correct, the only remaining difficulty regards the thirty-five thousand dollars necessary to make up to the city the full sum of fifty thousand dollars. And this sum the undersigned believe it to be just and expedient that Congress should appropriate, provided the corporation will bind itself to furnish in their new building sufficient accommodation for the United States circuit court, its officers and records; just, because the General Government has already, for the sum of ten thousand dollars only, (which it paid to the city twenty-five years ago,) had the use of nearly half the City Hall for its courts throughout all that term of years, and therefore ought now to furnish further means to procure the accommodations necessary for that purpose; and expedient, because the present City Hall, which cannot, for very shame, be left without some repair or finish much longer, will, from the necessity of the case, while it stands, remain a permanent ground of claim on the Government; and because any repairs worth making on it at all would exceed the sum here proposed to be appropriated. The cheapest thing that can be done with the City Hall, both as regards the city and the Government, is, the undersigned believe, to get rid of it. And if on its site a building arise, reputable even, to say nothing of architectural beauty, and commenced with funds and upon a scale that insures its speedy completion, it should count for something, if only on the score of appearance and national reputation, that a gloomy and meaningless and slovenly pile has been replaced by an object that will strike pleasantly on the eye of the traveler as he approaches this metropolis.

Governed by considerations such as these, the undersigned, in view of the fact that whatever is done in this matter must be done at this session of Congress, have decided, in discharge of the duty assigned them by the Board, to introduce into Congress, without delay, a bill to accomplish the desired object. (For this bill see Congressional Proceedings.)

It will be observed that this bill leaves the matter wholly at the discretion, first, of the corporation, and, secondly, of the Board of Regents. Unless both concur to accept its provisions, it will be inoperative. The undersigned do not know that either will accept them; but that they will, and that they ought to do so, they have given their reasons for believing.

GEO. EVANS,
WM. J. HOUGH,
ROBT. DALE OWEN,
} *Committee.*

WASHINGTON, D. C., *February* 18, 1847.

Since the publication of the above, and the introduction into the Senate by one of your committee of the bill referred to, the common council of Washington, during their session of February 22, passed, by vote of 17 to 8, a resolution to the effect

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"that it is the deliberate opinion of the two boards that the proposed change would not comport with the interests of the city."

This vote, your committee think, shuts out all prospect of carrying out the plan contemplated in the proposed bill; and for that reason, though after reflection has but confirmed their conviction of the propriety and utility of that plan, they have abandoned it, and have ceased to urge through Congress the passage of the bill in question.

All which is respectfully submitted.

GEO. EVANS.
WM. J. HOUGH.
ROBT. DALE OWEN.

The following resolution was offered by Mr. Seaton, read, considered, and agreed to, viz:

Resolved, That the Executive Committee be authorized to procure a seal for the institution, to comprehend the medallion head of Smithson, surrounded by the words "Smithsonian Institution."

Mr. Owen offered the following resolution; which was adopted:

Resolved, That the Secretary be authorized to receive from the Secretary of the Treasury the Treasury notes obtained under a previous resolution, and to deposit the same for safe keeping, unindorsed, with the consent of the Secretary of the Senate in the constitutional treasury of the Senate.

The Board adjourned until Saturday next, the 27th instant, at 10 o'clock, a. m.

February 27, 1847.

The Secretary reported that, in pursuance of the direction of the Board, he had written to the Treasury Department requesting the Treasury notes mentioned in the resolution of the Board at the last meeting, and had been informed that they could not be furnished at the present time for want of printed forms, but that they would be kept in the Treasury Department for the present, subject to the order of the Board.

The Secretary placed before the Board a number of letters, which were laid on the table, viz., one from Mr. Bartlett, of New York, offering for publication an account of the recent progress of ethnology, which might serve as the first of the series of the contemplated reports on that subject: another from Mr. Allen, of New York, on the importance of attention to the subject of ventilation; another with three sectional drawings of the geology of important lines in our country from the direction of Ohio.

On motion of Mr. Owen—

Resolved, That the Secretary be authorized to cause to be instituted a series of experiments to determine the economical value of the different building materials used in the United States.

Mr. Hough gave notice of a proposition which he intended to move for the reception and safe keeping of Mr. Catlin's collection of Indian portraits and memorials.

Mr. Hough also laid before the Board a request from Mr. Henry

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R. Schoolcraft respecting a paper which he desires to prepare on the subject of ethnology; which request was referred to the Secretary for conference thereupon with Mr. Schoolcraft.

The Board then adjourned until Monday next, at 10 o'clock, a. m.

March 1, 1847.

Mr. Preston appeared, and took his seat as a member of the Board of Regents.

Mr. Owen offered the following resolution; which was agreed to, viz:

Resolved, That the sum of five hundred dollars, or so much of the same as may be necessary, be, and the same is hereby, appropriated towards the expenses of the experiments heretofore authorized to be instituted to determine the economical value of the different building materials used in the United States.

Mr. Hough offered the following resolution, of which he gave notice at the last meeting, viz:

Resolved, That it being understood that Mr. George Catlin is about to return to this country with his collection of Indian paintings, &c., he be requested to deposit the same in one of the galleries of the Smithsonian Institution, as soon as the building shall be ready for its reception, provided he will do so without charge to the institution; and that upon such deposit being made, said institution will properly arrange and prepare said collection for exhibition.

The said resolution was read, considered, and agreed to.

Mr. Hough also proposed the following, which was adopted, viz:

Resolved, That the Secretary inform Mr. Catlin of the adoption of the above resolution, and of the probable time when the building will be ready for the reception of the collection.

The Secretary presented a memoir from Mr. Alexander Berry on the atmospheric refraction of light as connected with terrestrial electro-magnetism, the magnetic direction and variation, atmospheric electricity, &c., to be published in the Transactions of the Smithsonian Institution, or to be deposited, for the present, with the Board of Regents.

The said memoir was committed to the care of the Secretary.

On motion of Mr. Seaton—

Resolved, That the Chancellor and Secretary be authorized to sign the Report of Proceedings of the Board of Regents to the Senate and House of Representatives of the United States, prepared by the committee charged with that duty.

On motion of Mr. Hough, the Board of Regents then adjourned *sine die*.

December 8, 1847.

The Board of Regents of the Smithsonian Institution met this day in the room of the Vice-President of the United States agreeably to their resolution of the 9th September, 1846, fixing the time of their regular meetings.

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There appeared George M. Dallas, Chancellor; Alexander D. Bache, Sidney Breese, Gideon Hawley, Henry W. Hilliard, Robert Dale Owen, William W. Seaton, and Joseph G. Totten.

A quorum being present, the Board proceeded to business, the Chancellor being in the chair.

The Building Committee presented their report, which, together with the journal of their proceedings, was laid on the table.

On motion of Mr. Breese—

Ordered, That when the Board adjourn to-day it adjourn to meet on Friday next, at 10 o'clock, a. m.

The Board then adjourned until Friday next, at 10 o'clock, a. m.

December 10, 1847.

The Board met this morning agreeably to adjournment.

Present, in addition to those in attendance at the last meeting, Lewis Cass and J. A. Pearce.

The report of the Building Committee being called for, it was read by the chairman of the committee.

On motion of Mr. Seaton, it was—

Resolved, That the report of the Building Committee be laid on the table for the present, and also that the said committee have permission to withdraw the journal of their proceedings to enable them to complete the illustrations to accompany it.

The Secretary made a report relative to the transactions of the past year, the acceptance of memoirs, the purchase of apparatus, &c., and including a programme of organization.

On motion, the Board adjourned to meet to-morrow, at 12 o'clock, m., for the purpose of then visiting the building.

December 11, 1847.

The Board met agreeably to adjournment.

Present, George M. Dallas, Chancellor; Alexander D. Bache, Gideon Hawley, William J. Hough, Robert Dale Owen, J. A. Pearce, W. W. Seaton, and Joseph G. Totten.

The Board postponed their visit to the building, and proceeded to the consideration of other business.

Mr. Owen, from the Building Committee, submitted the application of Caleb Buckingham, for additional compensation beyond the amount of his contract, for supplying the building with water; and it was, on motion of Mr. Hough—

Resolved, That the said application be referred back to the Building Committee.

An application was presented by Mr. Seaton from Mr. Archer,

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asking remuneration for plans of buildings furnished the Board at their last session.

On motion of Mr. Hough—

Resolved, That the Board approve of the course pursued by the Building Committee in reference to the compensation given to Mr. Archer, and that he has no claim on the institution on account of architectural services.

Mr. Owen, from the Executive Committee, made a report relative to a plan of finance, and of appropriation of funds for the next four years, or until the buildings shall be completed.

On motion of Mr. Hawley—

Resolved, That the report of the Building Committee, of the Secretary, and of the Executive Committee, be inserted at large in the journal of proceedings.

On motion, the Board adjourned to meet on Monday morning, December 13th, at 9 o'clock, a. m.

December 13, 1847.

The Board met agreeably to adjournment.

Present, George M. Dallas, Chancellor; Alexander D. Bache, Sidney Breese, Gideon Hawley, William J. Hough, Robert Dale Owen, J. A. Pearce, W. W. Seaton, and Joseph G. Totten.

The Chancellor presented an application from Messrs. Bailey & Co., of Philadelphia, asking that they may be employed to construct a clock for one of the towers of the Smithsonian building.

On motion of Mr. Seaton—

Resolved, That the application of Messrs. Bailey & Co., be referred to the Building Committee.

Mr. Seaton presented a letter from the trustees of the Bank of the United States, in Philadelphia, offering to sell to the institution a number of portraits of revolutionary patriots; and, on motion of Mr. Breese, it was

Resolved, That the above letter be laid upon the table.

On motion of Mr. Owen—

Resolved, That the Executive Committee cause to be printed, in the same form as the report on organization, one thousand copies of the address delivered by the Chancellor of the Institution on occasion of laying the corner-stone of the building, and that the Secretary cause to be laid on the desk of each member of the Senate and of the House of Representatives two copies of the same, as soon as it shall be printed.

On motion of Mr. Bache, the following resolutions were adopted:

1. *Resolved*, That so much of the programme presented to the Board of Regents by the Secretary of the Smithsonian Institution, in his recent report, as is contained in sections Nos. 1 and 2 of said programme, be provisionally adopted; and that the Secretary be charged with the execution of its details, as far as the funds appropriated for the several objects may permit, and that he be directed to report annually to the Board his progress in the execution of this duty.

2. *Resolved*, That the Executive Committee be directed to report, after consultation with the Secretary, to the Board of Regents, in relation to the appropriation desirable for the year beginning March 19, 1848, in execution of the parts of the programme which have been provisionally adopted.

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Mr. Owen, of the Executive Committee, asked to be excused from further service on said committee, which was not agreed to by the Board.

Col. Totten also asked to be relieved from the duties of the same committee; the time spent by him as a member of the Building Committee being as much as he could spare from his professional duties.

The motion to excuse Col. Totten being put by the Chancellor, it was carried.

The Board then proceeded to the election, by ballot, of a member to fill the vacancy thus created; and, on counting the votes, it was found that Mr. Bache was elected.

The Secretary presented to the Board the application of Messrs. Baker & Scribner, asking a new certificate of the deposit of a book presented in accordance with the act authorizing the establishment of the institution.

On motion of Mr. Seaton—

Resolved, That the Secretary inform Messrs. Baker & Scribner, that the Board do not feel authorized to grant a new certificate, though, as far as the rights of the institution are concerned, they are perfectly satisfied with the deposit of the book.

The Secretary presented a list of books received in accordance with the tenth section of the act of Congress establishing the institution; and, also, a list of books presented to the institution.

Which report was laid upon the table.

On motion, the Board adjourned to meet on Wednesday, the 15th instant, at 1 o'clock, p. m.

December 15, 1847.

The Board met agreeably to adjournment.

Present, George M. Dallas, Chancellor; Alexander D. Bache, Sidney Breese, Lewis Cass, Henry W. Hilliard, William J. Hough, Robert Dale Owen, J. A. Pearce, W. W. Seaton, and Joseph G. Totten.

Mr. Seaton, from the Executive Committee, presented a report on the state of the funds of the institution.

Mr. Bache, from the Executive Committee, to whom was referred the resolution of the 13th instant, relative to the appropriations for the year commencing on the 19th of March, 1848, made the following report:

The committee, after consultation with the Secretary, recommend the passage of the following resolution:

That the appropriations for the year commencing on the 19th of March, 1848, for objects other than those provided for out of the building fund, be for the present as follows:

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For the publication of Transactions, the sum of three thousand and five hundred dollars;

For computations relative to occultations, two hundred and fifty dollars;

For the purchase of magnetic instruments, six hundred dollars;

For instruments and other expenses connected with meteorological observations, one thousand dollars;

For arrangement of apparatus, &c., in such portion of the building as shall be completed next autumn, one hundred and fifty dollars;

For expenses of lectures, including lighting of lecture-room, five hundred dollars

For publication of scientific reports, five hundred dollars;

For general expenses of the institution, including salary of officers, expenses of the Board and its committees, clerk hire, postage, &c., seven thousand five hundred dollars;

For the purchase of books, and incidentals connected therewith, one thousand dollars;

Or so much of each of said sums as may in the said year be required.

On motion of Mr. Hough, the report and resolution were adopted.

On motion of Mr. Owen, the following preamble and resolutions were read, considered, and agreed to:

Whereas it has been intimated to this Board, that the American sculptor, Hiram Powers, desires to make some arrangements by which his marble statue of the Greek Slave may obtain, at the seat of Government of his native country, a suitable tribune, in a fire-proof building, where it shall forever remain open—ultimately without charge—to his countrymen and others visiting the metropolis; therefore—

I. *Resolved*, That the Executive Committee be, and they are hereby, authorized to make, with the said Hiram Powers or his duly authorized agent, a contract in regard to the procurement and safe keeping of the said statue, as follows, to wit: That the Smithsonian Institution will receive and place in a fire-proof portion of their building, the said statue, in three years from this date, that is to say, on the 15th of December, 1850, or sooner, if a suitable room can be prepared, and the said Hiram Powers should desire it; that for three years from and after the said 15th of December, 1850, or such earlier date as the said statue shall be received, the Smithsonian Institution binds and obliges itself to keep the said statue on exhibition, charging for a single ticket twenty-five cents, and for a season ticket, to be valid for one year, fifty cents; and that they will pay over, from time to time, unto the said Hiram Powers, the gross amount of the receipts of said exhibition, without any deduction therefrom for rent, attendance, or any other expense, whatever; said gross receipts to be in full payment of said statue which shall thereafter remain the property of the Smithsonian Institution, and the said institution binds and obliges itself at the expiration of the said three years of exhibition of the said statue, and forever after, safely to keep the said statue, and to admit visitors to the same at reasonable times as they are admitted to the other collections of the institution, free of all charges whatsoever.

II. *Resolved*, That the chairman of the Executive Committee transmit to Miner K. Kellogg, Esq., in whose charge the statue now is, a copy of the foregoing preamble and resolutions.

Mr. Seaton laid before the Board a catalogue of the library of the late Right Hon. Henry S. Fox, offered by his executor, for sale to the Smithsonian Institution; also a letter from Richard Smith, Esq., agent for the trustees of the Pennsylvania Bank of the United States, accompanied by a list of two hundred and eight portraits of revolutionary worthies and other distinguished men, which the agent offers to the Board of Regents for sale on such terms as may be agreed on.

On motion, the said catalogue of books and list of portraits were laid on the table, and the Secretary was requested to inform the gentleman offering the books that it is not in the contemplation of

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the Board to enter at present into the purchase of books towards the formation of a general library; and the agent of the bank, that however highly the Board values the portraits of the distinguished men enumerated, and however much they would like to place them in their gallery of art, it is not in the power of the Board, consistently with existing arrangements and obligations, to apply their funds to such an acquisition.

Mr. Bache presented a letter from Lieutenant Gilliss, relative to a proposed expedition, for the purpose of observations on the solar parallax by the method of Gerling, and asking of the Board an opinion of the same, which might be placed before the Secretary of the Navy; and, on motion of Col. Totten, it was—

Resolved, That the letter of Lieutenant Gilliss, and the accompanying papers, be referred to the Secretary of the Smithsonian Institution, with authority to give his individual opinion to Lieutenant Gilliss on the subject.

Mr. Cass advised, that in order to prevent the time of the Secretary being consumed in the examination of the various schemes which will be presented to him, that he adopt the rule of giving no opinion on any subject, unless he be required to examine it by the Board.

Mr. Owen presented the following proposition, namely:

Resolved, That the Building Committee may, at their option, accede to the request of Mr. Notman, architect, to have his drawings of a design for the Smithsonian Institution returned to him.

Which, on motion of Col. Totten, was laid on the table.

On motion of Mr. Bache, it was—

Resolved, That the Chancellor of the Smithsonian Institution be the organ of communication of the Smithsonian Institution with the public, and that the Secretary be the organ of communication between the officers of the institution and the Board.

And then, on motion, the Board adjourned until Friday next, at 11 o'clock, a. m.

December 17, 1847.

The Board met agreeably to adjournment.

Present, George M. Dallas, Chancellor, Alexander D. Bache, Lewis Cass, Henry W. Hilliard, William J. Hough, Robert Dale Owen, J. A. Pearce, W. W. Seaton, and Joseph G. Totten.

Mr. Hough introduced the following resolution; which was agreed to:

Resolved, That by the appointment of Hon. Richard Rush, of Pennsylvania, to the office of minister plenipotentiary to France, and his continued absence from the United States, and residence at a foreign court for an indefinite length of time under such appointment, his office of Regent of the Smithsonian Institution has become vacant, and that Mr. ——— be a committee to introduce into, and procure to be passed through the Senate of the United States, the necessary joint resolution of the

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two houses of Congress for the appointment of ——— a Regent of said institution, to fill such vacancy, pursuant to third section of the act incorporating said institution.

On motion of Mr. Hough, it was—

Resolved, That the first blank be filled with the name of Mr. Pearce, and the second with that of Mr. Owen.

On motion of Mr. Bache, it was—

Resolved, That the Board of Regents recommend to the establishment the election of the Hon. Richard Rush, of Pennsylvania, late a member of the Board of Regents, as an honorary member of the Smithsonian Institution.

On motion of Mr. Seaton, it was—

Resolved, That the Chancellor be deputed to request a meeting of the establishment for the purpose of proposing the Hon. Richard Rush as an honorary member of the Smithsonian Institution.

And, on motion of Mr. Seaton, it was also—

Resolved, That the Chancellor be requested to address a letter to Mr. Rush, conveying to him the regret of the Board of Regents at his absence, and consequent retirement from the Board, and the circumstances which induced the Board to take the step of filling the vacancy.

On motion of Mr. Owen—

Resolved, That the Chancellor and the chairman of the respective committees of the Board be a committee to prepare and present to Congress at their earliest convenience, and after consultation with the Secretary, the annual report of the Board of Regents to Congress; and that Mr. ——— and Mr. ———, members of this Board, be requested to move in their respective houses for the printing of an additional number of copies.

On motion—

Resolved, That the first blank be filled with the name of General Cass, and the second with the name of Mr. Hilliard.

It having been announced by the Secretary that the following telegraphic dispatch had been received from Mr. Choate, viz:

BOSTON, *December* 16, 1847.

For Professor JEWETT.
I will be in Washington on Monday.

RUFUS CHOATE.

Therefore, on motion of Mr. Bache, it was—

Resolved, That when this Board adjourn, it adjourn to meet on Tuesday next, at 11 o'clock, a. m.

And the Board then adjourned until Tuesday, December 21st, 1847, at 11 o'clock, a. m.

December 21, 1847.

The Board met agreeably to adjournment.

Present, George M. Dallas, Chancellor; Alexander D. Bache, William J. Hough, Henry W. Hilliard, W. W. Seaton, Joseph G. Totten, and Rufus Choate.

The Secretary presented various letters from individuals and resolutions from societies, commending the plan of organization of the Smithsonian Institution given in the Programme presented by him to the Board in his report; which were laid upon the table.

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The Chancellor presented a letter from Peter A. Brown, of Philadelphia, relative to an appropriation of funds to Dr. Dickerson for the purpose of ethnological explorations; which, for the present, was laid on the table.

The Secretary presented a letter, addressed to himself, from Professor Jewett, containing suggestions as to the details of the formation of the library; which was laid upon the table.

The Board then proceeded to the consideration of the resolutions presented by the Executive Committee at the meeting of the 15th of December, and after some remarks on the same.

On motion, it was—

Resolved, That the Board adjourn until half past seven o'clock, this evening.

Same day 7½ o'clock, p. m.

The Board met agreeably to adjournment.

Present, Alexander D. Bache, William J. Hough, Robert Dale Owen, W. W. Seaton, Henry W. Hilliard, Sidney Breese, Rufus Choate, Joseph G. Totten.

In the absence of the Chancellor, Mr. Seaton took the chair.

The resolutions appended to the report of the Executive Committee, relative to a scale of expenditure up to the 19th of March, 1852, coming up for consideration, they were adopted.

On motion of Mr. Bache, it was—

Resolved, That the Secretary be requested to inform the Assistant Secretary, Professor Jewett, that the Board of Regents will expect him to enter upon his duties on the 19th March, 1849, at which time his salary will commence.

Mr. Choate offered the following resolution; which, at his suggestion, was laid upon the table:

Resolved, That a committee of three be appointed by the Chancellor, to consider, in conjunction with the Secretary, and to report at the next meeting, what services may be rendered by the Assistant Secretary, acting as Librarian, between this time and March 19th, 1849, and what may probably be the expense of these services.

On motion, the Board then adjourned to meet to-morrow, Wednesday, December 22, 1847, at 10 o'clock, a. m.

December 22, 1847.

The Board met agreeably to adjournment.

Present, George M. Dallas, Chancellor; Alexander D. Bache, William J. Hough, Robert Dale Owen, and W. W. Seaton.

On motion, the Board adjourned to meet at 8 o'clock this evening.

Same day, 8 o'clock, p. m.

The Board met agreeably to adjournment.

Present, George M. Dallas, Chancellor; Alexander D. Bache,

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Henry W. Hilliard, William J. Hough, Robert Dale Owen, W. W. Seaton, and Joseph G. Totten.

The Chancellor placed before the Board a letter from Mr. Stabler, asking additional compensation for constructing a seal and press for the institution.

On motion, this communication was referred to the Executive Committee, with power to increase the compensation, if they deem it just, within the limits of the account rendered.

Mr. Owen renewed the request previously made by him to be excused from serving on the Executive Committee, stating that if, in accordance with the tenor of a resolution heretofore passed by the Board, he should be re-elected Regent, his duties as a member of the Building Committee would demand much of his time, as the committee had referred to him the preparation of the manuscript of the volume on public architecture, with the publication of which they have been charged by the Board; and by excusing him from service now, the Board would have an opportunity, before they adjourned, to fill the vacancy.

The motion to excuse Mr. Owen from service on the Executive Committee being put by the Chancellor, it was carried.

By unanimous consent, the vacancy caused by the acceptance of the resignation of Mr. Owen, was filled by the appointment of Mr. Pearce.

Mr. Bache moved a reconsideration of the motion offered by him at the meeting of the Board last evening, relative to the service of the Assistant Secretary, acting as Librarian, and asked that the motion might be laid on the table; which was granted.

On motion of Mr. Seaton, it was—

Resolved, That the salary of the messenger be at the rate of four hundred dollars per annum.

On motion, the Board adjourned to meet to-morrow, Thursday, the 23d of December, 1847, at 10 o'clock, a. m.

December 23, 1847.

The Board met agreeably to their adjournment.

Present, George M. Dallas, Chancellor; Alexander D. Bache, Rufus Choate, W. W. Seaton, and Joseph G. Totten.

George P. Marsh, of Vermont, and Robert McClelland, of Michigan, members of the Board, appointed from the House of Representatives to fill the places of Mr. Owen and Mr. Hough, whose term of service has expired, appeared and took their seats, as also Mr. Hilliard, re-appointed a member of the Board.

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The resolution offered by Mr. Choate on Tuesday, the 21st instant, relative to the appointment of a committee of three to consider what services may be rendered by the Assistant Secretary, acting as librarian, between this time and March 19, 1849, coming up for consideration, it was adopted.

And the Chancellor appointed Messrs. Choate, Bache, and McClelland the said committee.

The Secretary stated to the Board that during the past year he had, with the consent of the Executive Committee, given a course of lectures at Princeton, for which he had received, including the rent of the house occupied by his family, a compensation of one thousand dollars. For this sum, after deducting certain expenses for clerk hire, assistance, &c., he had given credit to the Board in his account for the present half year.

On motion, the Board adjourned to meet on Friday next, at 12 o'clock, m.

December 24, 1847.

The Board met agreeably to adjournment.

Present, George M. Dallas, Chancellor; Henry W. Hilliard, George P. Marsh, Robert McClelland, W. W. Seaton, and Joseph G. Totten.

The Chancellor presented the following letter from Gen. Cass:

WASHINGTON CITY, *December* 24, 1847.

SIR: Finding it impossible, consistently with my other duties, properly to execute the trust of a Regent of the Smithsonian Institution, I request that this may be considered as my resignation of that office.

I have the honor to be, sir, very respectfully, your obedient servant,

LEWIS CASS.

Hon. GEORGE M. DALLAS,
Vice-President of the United States.

On motion of Mr. Seaton, it was—

Resolved, That Mr. Breese be requested to move in the Senate of the United States the appointment of a successor to Gen. Cass.

Also, on motion of Mr. Seaton, it was—

Resolved, That the account of expenditures rendered by the Executive Committee, after being certified by the Chancellor and the Secretary, be entered on the journal.

On motion, the Board then adjourned to meet at 10 o'clock, a. m., on Monday, the 27th instant.

December 27, 1847.

The Board met agreeably to their adjournment.

Present, George M. Dallas, Chancellor; Alexander D. Bache, Sidney Breese, Rufus Choate, George P. Marsh, Robert McClelland, and Joseph G. Totten.

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Mr. Choate, on behalf of the committee appointed on the 23d instant, relative to the duty of the Assistant Secretary, made the following report:

The committee appointed at a meeting of the Board of Regents on the 23d instant, to inquire and report in what manner the Assistant Secretary, acting as Librarian, may be employed (if at all) with advantage to the Smithsonian Institution, between the present time and the 19th March, 1849, respectfully present for the consideration of the Board the following resolutions, embracing the matter of their inquiries, together with a report from the Assistant Secretary.

Respectfully submitted by—

R. CHOATE,
A. D. BACHE,
R. McCLELLAND,
Committee.

The resolutions accompanying the report were as follows:

Resolved, That the Assistant Secretary, acting as librarian, may be employed with advantage to the Smithsonian Institution, during a portion of the time between this date and the 19th of March, 1849, in the following duties, to wit:

1. The preparation of catalogues of books suitable for the commencement of the library, in accordance with the plan of organization heretofore adopted by the Board of Regents.
2. The purchase of the more necessary books on bibliography.
3. The collection and systematic arrangement, for purposes of comparison, of the printed catalogues of the principal libraries throughout the United States; together with information in regard to the expenditures, plans of increase, and other particulars relating to the said libraries.
4. The collection of books to which the institution may be entitled under the tenth section of the act organizing the institution.

Resolved, That the Assistant Secretary, acting as librarian, be employed for the purposes specified in the foregoing resolution under the direction of a committee of three members of the Board, to be appointed by the Chancellor, and to act in conjunction with the Secretary, at a compensation to be fixed by the Executive Committee, but not to exceed one thousand dollars, for any services he may render between this date and the time fixed for the commencement of his regular duties as Assistant Secretary.

The said resolutions were adopted.

Whereupon, the Chancellor appointed Mr. Choate, Mr. Marsh, and Mr. Bache the said committee.

The Secretary presented to the Board the subject of the remuneration of the Assistant Secretary for services rendered during the past year: when—

On motion, it was—

Resolved, That the subject of compensation to the Assistant Secretary for services rendered during the past year, be referred to the Executive Committee.

The Board then adjourned *sine die*.

December 13, 1848.

This being the day fixed by their resolutions of September 9, 1846, and of December 21, 1847, for their regular annual meeting, the Board of Regents of the Smithsonian Institution convened in the room of the Vice-President of the United States, in the Capitol, at 12 o'clock, m.

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Present, the Chancellor, Messrs. Bache, Breese, Davis, Hilliard, Marsh, McClelland, Pearce, Seaton, and Totten.

A quorum being present, and the Chancellor being obliged to leave in consequence of his duties in the Senate, Mr. Totten was called to the chair.

The Secretary stated to the meeting that Messrs. Choate and Hawley had been reappointed as Regents to fill the vacancies occasioned by the expiration of their first term of service.

The Secretary also stated that he had sent telegraphic messages to Messrs. Choate and Hawley announcing their reappointment, and informing them that the Board would probably transact no business for some days in order to give them an opportunity to be present.

Whereupon, on motion, the Board adjourned to meet on Monday, the 18th instant, at 11 o'clock, a. m.

December 18, 1848.

The Board met agreeably to adjournment.

Present, the Chancellor, Messrs. Bache, Breese, Davis, Hilliard, Marsh, McClelland, Pearce, Seaton, and Totten.

Mr. Seaton, from the Executive Committee, presented a report of the expenditures and state of the funds of the institution.

Mr. Totten, from the Building Committee, presented a report on the progress of erection of the Smithsonian edifice and improvements of the grounds, with estimates of future expenses, &c.

The Secretary presented his annual report of the operations of the institution, accompanied by a report of the Assistant Secretary relative to the library.

On motion, it was—

Resolved, That these several reports be recorded on the pages of the journal.

On motion, the Board adjourned to meet on Wednesday, the 20th instant, at 11 o'clock, a. m.

December 20, 1848.

The Board met agreeably to adjournment.

Present, the Chancellor, Messrs. Bache, Breese, Davis, Marsh, Pearce, Seaton, and Totten.

On motion of Mr. Marsh, it was—

Resolved, That the Secretary and Executive Committee be authorized to present to Messrs. Squier and Davis two hundred copies of their memoir contained in the first volume of the Smithsonian Contributions to Knowledge.

Mr. Marsh presented a letter from John R. Bartlett, of New York, accompanying a plan for the preparation of a new and im-

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proved dictionary of the English language, under the auspices of the Smithsonian Institution.

On motion, it was—

Resolved, That the forementioned letter and plan be referred to the Secretary, the Executive Committee, and Mr. Marsh.

On motion of Mr. Marsh, it was—

Resolved, That the Secretary be authorized to purchase, for the sum of one hundred and fifty dollars, the lithographic stones upon which are traced the designs for the first volume of the Smithsonian Contributions to Knowledge.

Mr. Seaton presented letters from several persons making application for employment in the institution.

The Secretary called the attention of the Board to the statement made in his report relating to the valuable donation of apparatus, made to the institution by Dr. Robert Hare, of Philadelphia.

Whereupon, on motion of Mr. Seaton, it was unanimously—

Resolved, That a committee be appointed, to consist of the Chancellor, Secretary, and Mr. Pearce, to communicate in suitable terms to Dr. Hare, the thanks of the Board of Regents for the munificent present of his extensive and very valuable apparatus to the Smithsonian Institution.

The Secretary stated to the Board the progress made in the distribution of the first volume of the Smithsonian Contributions to Knowledge among colleges, learned societies, and large libraries; no copies having as yet been given to individuals.

The Secretary presented a list of donations to the institution.

The Secretary also presented letters from several distinguished individuals, highly approving the plan of the proposed *Bibliographia Americana*, mentioned in his report.

On motion, the Board adjourned to meet on Wednesday, the 27th instant, at 11 o'clock, a. m.

December 27, 1848.

The Board met agreeably to adjournment.

Present, Messrs. Bache, Davis, McClelland, Seaton, and Totten.

The Chancellor being absent, Mr. Davis was called to the chair.

The Secretary presented a letter from J. Disturnell, of New York city, accompanying a copy of a memorial to Congress, relative to the preparation of a new gazetteer of North America; which letter and memorial were referred to the Secretary and Executive Committee.

The Secretary also presented a letter from Francis Markoe, Esq., of Washington, offering for sale to the institution the collection of objects of natural history belonging to the estate of the late British Minister to the United States, H. S. Fox, Esq.; which was referred to the Secretary and Executive Committee, it being

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understood that the financial arrangements of the Board do not for the present allow the purchase of collections in natural history.

The Secretary also presented a letter from Archibald Campbell, Esq., Deputy Secretary of the State of New York, accompanying a donation to the institution, made in accordance with an act of the Legislature of that State, of the 14 published volumes in quarto of the Natural History of New York.

On motion, the Chancellor and Secretary were requested to present the thanks of the Board of Regents for this valuable donation.

The Secretary also presented letters from several presidents of colleges; also reports from several learned societies, highly commending the programme of organization of the institution.

Whereupon, it was—

Resolved, That the Secretary be instructed to insert in the records of the institution the names of all such individuals and societies.

On motion, it was—

Resolved, That the Chancellor, Secretary, and chairman of the Executive Committee, be requested to prepare the annual report of the Regents to Congress, giving an account of the operations, expenditures, and condition of the institution.

On motion of Mr. McClelland, it was—

Resolved, That the Secretary be requested to return the thanks of the Board of Regents to the Secretary of the Treasury of the United States, to the Secretary of the Navy, and to the Secretary of War, for their assistance in promoting the objects of the institution. Also, to the Hon. Mr. Irwin and Mr. Trist, for their donations; and to Mr. Downs, of Philadelphia, for his computations of occultations.

At the request of Mr. Seaton, the Executive Committee were allowed to withdraw their report, in order to enable them to include therein the disbursements and condition of the finances of the institution up to the end of the year 1848.

At the request of Mr. Totten, permission was given to the Building Committee to withdraw their report for the purpose of making the same more complete.

On motion, it was—

Resolved, That the Board adjourn, to meet on Wednesday next, at 11 o'clock, a. m.

January 3, 1849.

The Board met agreeably to adjournment.

Present, the Chancellor, Messrs. Bache, Marsh, McClelland, Seaton and Totten; also, by invitation, Dr. Hare, of Philadelphia.

Mr. Seaton presented the revised report of the Executive Committee, which had been withdrawn for the purpose of extending the accounts up to the first of January, 1849; which was accepted.

The Secretary read a letter from Dr. Hare, relative to the presen-

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tation of his apparatus to the institution; which was ordered to be placed upon the journal.

Mr. Bache presented letters from J. Guillemard, Esq., of Woodford, England, and from Professor Faraday, of London, concerning James Smithson; which were ordered to be preserved in the archives of the institution.

Mr. Seaton, from the Building Committee, read a letter fron Mr. Owen, late a Regent and chairman of the Building Committee, relative to the publication of the work entitled "Hints on Public Architecture."

Whereupon, on motion, it was—

Resolved, That the Building Committee be authorized, provided the same be required by the publishers, to transfer, out of appropriations originally made for experiments on building materials, a sum not exceeding two hundred dollars, to the appropriations heretofore made, for the publication of a volume on public architecture.

On motion of Mr. Seaton, the following appropriations, recommended by the Executive Committee for the service of the ensuing year, were taken up, considered, and adopted, viz:

For publication of "Contributions to Knowledge"	$3,000 00
Scientific researches and computations	700 00
Meteorological instruments and researches	1,000 00
Public lectures, &c.	500 00
Publication of scientific reports	500 00
Preparation of the general catalogue of American libraries	1,000 00
Purchase of bibliographical works and books of general reference	2,000 00
Binding, blank books, stamps, certificates, &c	250 00
Purchase of books needed by authors of reports, &c	400 00
General expenses, including salaries of officers, expenses of the meetings of the Board, and of committees, clerk hire, postage, &c	8,000 00
	$17,350 00

On motion, it was—

Resolved, That the Chancellor and the Secretary of the Smithsonian Institution be authorized to exchange the Treasury notes, belonging to the institution, for United States stock; that the certificates for the said stock be taken in the name of the Chancellor and Secretary, and that the stock and its proceeds be at the disposal of the same, under the regulations heretofore existing as to the Treasury notes for the purposes of the institution, in accordance with the several appropriations of the Board.

On motion of Mr. Seaton, it was—

Resolved, That the Secretary be authorized to appoint some suitable person, at a salary not to exceed four hundred dollars per annum, to act as book-keeper and accountant of the institution and to perform such other duties as are specified in the report of the Executive Committee.

The Secretary exhibited a copy of the last edition of Dr. Hare's Chemistry, presented to the institution by the author, containing illustrations of his apparatus, now the property of the institution, and mentioned that among the articles presented by Dr. Hare, were the blocks from which these illustrations were printed.

Whereupon, on motion of Mr. Bache, it was—

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Resolved, That the Secretary be requested to prepare, for the use of the institution, a descriptive catalogue of Dr. Hare's apparatus, illustrated by impressions from the original blocks.

On motion the Board adjourned to meet on Saturday next, at 10 o'clock, a. m.

January 6, 1849.

The Board met agreeably to adjournment.

Present, the Chancellor, Messrs. Bache, Davis, Hilliard, McClelland, Marsh, Pearce, Seaton, and Totten.

Mr. Totten presented the revised report of the Building Committee; which was accepted.

Mr. Hilliard read a letter from Mr. Squier; which was referred to the Secretary and Executive Committee.

On motion of Mr. Bache, it was—

Resolved, That as the discharge of the duties assigned to the Assistant Secretary, acting as Librarian, are now such as to give entire employment to his time, he receive from the first instant, the full compensation provided by the resolution of the Board, adopted January 26, 1847.

On motion of Mr. Seaton, it was—

Resolved, That when the Board adjourn, it adjourn to meet on Wednesday, the 7th of March next, at 10 o'clock, a. m., in the Vice-President's room in the Capitol, for purpose of electing a Chancellor, in the place of Mr. Dallas, whose term of office as Regent expires on the 4th of March next.

The Assistant Secretary, acting as Librarian, read his report relative to the library.

The Board then, on motion, adjourned to meet on Wednesday, the 7th of March next.

March 7, 1849.

The Board met at 10 o'clock, a. m., in the Vice-President's room in the Capitol, agreeably to adjournment.

Mr. Seaton was called to the chair.

Present, Messrs. Bache, Davis, Fillmore, Hilliard, Mason, Seaton and Totten.

The chairman stated the object of the meeting to be to elect a Chancellor in the place of Mr. Dallas, whose term of office as Regent had expired. On the ballot being counted, it appeared that Mr. Fillmore was unanimously elected.

On motion of Mr. Seaton, it was unanimously—

Resolved, That the Chancellor and Secretary be requested to communicate to the Hon. George M. Dallas the high appreciation entertained by the Board of his services as Regent—particularly during the period of the organization of the institution—their thanks for the manner in which he discharged the duties of presiding officer of the institution, and their respect for his character as a gentleman and a scholar.

On motion of Mr. Mason, it was unanimously—

Resolved, That the Secretary inform the President of the Senate that a vacancy exists in the Board of Regents by the expiration of the term of Mr. Pearce of the Senate.

The Board then adjourned *sine die*.

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January 2, 1850.

This being the day appointed for the annual meeting of the Regents, the Board met at half-past twelve o'clock, in the eastern range of the Smithsonian building.

Present, Messrs. Davis, Fillmore, Mason, Rush, Seaton, and Totten.

Mr. Fillmore, Chancellor of the Institution, took the chair.

Professor Henry, the Secretary, stated to the Board that, since the last meeting, the Hon. Mr. Pearce, of Maryland, had been appointed a Regent from the Senate of the United States, and that there were now three vacancies in the Board to be filled from the House of Representatives. The Secretary also stated that his report on the operations of the institution was ready to be laid before the Board, but as the new members would probably be appointed in a few days, he would suggest that the reading of it be deferred until the next meeting.

Mr. Seaton, chairman of the Executive Committee, stated that this meeting occurred too soon after the close of the fiscal year to permit the accounts to be made up, and requested that his report be postponed until the next meeting.

General Totten, chairman of the Building Committee, made a similar request.

No objection being made, the presentation of these reports was deferred until the next meeting.

In answer to a question from the chair, the Secretary stated, in general terms, what business would occupy the attention of the Board at this session.

On motion of Mr. Seaton, the Board adjourned, to meet on Friday, the 11th instant, at 11 o'clock, a. m.

January 11, 1850.

The Board of Regents met this day, agreeably to adjournment, in the Smithsonian building.

The meeting was called to order by Mr. Seaton. The Chancellor being absent, on motion of Mr. Seaton, Mr. Pearce was called to the chair.

The Secretary announced to the Board that the Hon. Mr. Hilliard, of Alabama, Hon. Mr. Colcock, of Georgia, and the Hon. Mr. Fitch, of Indiana, had been appointed Regents from the House of Representatives. These gentlemen appeared and took their seats at the Board.

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The members then present were Messrs. Colcock, Davis, Fillmore, Fitch, Hilliard, Mason, Pearce, Rush, Seaton, and Totten.

The proceedings of the last meeting were read and approved.

The report of the Secretary of the Institution was presented and read:

On motion of Mr. Seaton, it was—

Resolved, That the report of the Secretary be recorded, and form a part of the report of the Regents to Congress.

Mr. Seaton, on behalf of the Executive Committee, presented a report on the financial condition of the institution, and stated that the report was complete thus far, and that the portion relating to the appropriations for the ensuing year would be presented at another time.

Gen. Totten presented the report of the Building Committee.

On motion of Mr. Pearce, it was—

Ordered, That these reports be also recorded.

The Secretary suggested that the journal of the *establishment* be read. It was accordingly read.

On motion of Mr. Seaton, it was—

Resolved, That the honorary members of the Smithsonian Institution be, and are hereby, invited to attend the meetings of the Board of Regents whenever they may think fit; and that the Secretary communicate to the present honorary members, and from time to time to such persons as may be elected honorary members, this resolution and invitation of the Board of Regents.

Mr. Davis presented, by request, a proposition of Mr. Harmon, of Ohio, for the encouragement of architecture.

This proposition was, on motion of Mr. Davis, referred to the Secretary and Executive Committee.

Mr. Rush presented a letter from Harrison Hall relative to the purchase of books; which was laid on the table.

The Secretary stated that he had received a note from the Hon. Abbott Lawrence, United States Ambassador to Great Britain, concerning a communication from H. P. Bohn, offering for sale, at the price of thirty guineas, a small portrait of James Smithson, now in the possession of Mrs. Fitall, widow of a servant of the late Mr. Smithson.

This communication having been read, on motion of Mr. Mason, it was—

Resolved, That the Secretary be authorized to purchase the portrait of the late Mr. Smithson, spoken of by Mr. Lawrence in his letter of 10th of December, 1849.

On motion of Mr. Davis, the Board adjourned, to meet on Saturday, the 18th instant, at 11 o'clock, a. m.

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January 18, 1850.

Several of the Regents met this day, agreeably to adjournment. A quorum not being present, the meeting adjourned to the 22d instant.

January 22, 1850.

The Board of Regents met, agreeably to adjournment, at half past six o'clock, p. m., in the Smithsonian building.

Present, Messrs. Fillmore, Colcock, Davis, Fitch, Hilliard, and Pearce.

The Chancellor called the meeting to order, and the proceedings of the last meeting were read and approved.

The first business in order being Professor Jewett's report on the library, the same was presented by the Secretary, and ordered to be read. It was accordingly read, and ordered to be printed.

A letter was presented by the Secretary, from Rev. N. Paddock, requesting the co-operation of the Smithsonian Institution with an Educational Institution, proposed to be established in the city of Washington—together with the proposed answer of the Secretary; in which answer the Board concurred.

A list of Chinese books for sale, and an accompanying letter from the Hon. Caleb Cushing, were laid before the Board, read, and referred to the Secretary.

The proposition of Mr. Harmon, of Ohio, relative to architecture, was called up; no action, however, was taken upon it, and the Board adjourned, to meet on Saturday, 26th instant, at 10 o'clock, a. m.

January 26, 1850.

The Board of Regents met this day at 11 o'clock, agreeably to adjournment.

Present, Messrs. Fillmore, Davis, Hilliard, Mason, and Pearce.

The Chancellor took the chair, and the proceedings of the last meeting were read.

The Secretary called the attention of the Board to the astronomical expedition of Lieutenant Gilliss, and a letter was read from him, dated at his station near Santiago, Chili. The information thus placed before the Board, concerning the object and progress of the expedition, made apparent the importance of furnishing Lieutenant Gilliss with improved instruments.

Whereupon, on motion of Mr. Mason, it was—

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Resolved, That the Secretary be directed to furnish Lieutenant Gilliss with instruments for facilitating his physical and astronomical observations in Chili, at an expense not exceeding one thousand dollars.

The consideration of Mr. Harmon's plan for the encouragement of architecture was then resumed and discussed; when, on motion of Mr. Hilliard, it was—

Resolved, That the Secretary be instructed to report on the scheme submitted by Mr. Harmon, for the improvement of architecture, exhibiting such features of the scheme as may be found to be within the plan of organization adopted for the operations of the Smithsonian Institution.

The Secretary presented to the Board a list of the names of gentlemen who had undertaken the labor and responsibility of examining memoirs and propositions submitted to the institution.

Whereupon, on motion of Mr. Davis, it was—

Resolved, That the Secretary be requested to address a letter to each of the gentlemen named, and convey to them the thanks of the Board of Regents for their assistance in carrying on the operations of the institution.

Mr. Davis presented a communication from Charles B. Wells, Esq., relative to a series of archæological researches made by himself in Peru, and requesting the assistance of the institution in their publication; which was referred to the Secretary.

A letter was presented from Daniel Peirce, detailing a method of educating the Indian tribes; which was also referred to the Secretary.

The Secretary called the attention of the Board to the engagement existing between the institution and Hiram Powers, relative to the purchase of his statue of the Greek Slave; which subject was referred to the Secretary, with the understanding that he would communicate with Mr. Powers, or his agent, for the purpose of effecting an alteration in the terms of the contract.

The Secretary made a verbal report, on the progress made by Henry Stevens in the compilation of the "Bibliographia Americana."

He also presented a letter from Pierre Margry, of Paris, requesting the assistance of the institution to enable him to publish his researches upon the history of the ancient French colonies in North America; which letter was referred to the Secretary, for a reply, in accordance with the rules adopted by the Board.

On motion of Mr. Davis, it was—

Resolved, That the Board adjourn, to meet on Saturday next, at 10 o'clock, a. m.

Whereupon, the Board adjourned.

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February 2, 1850.

The following gentlemen attended, agreeably to adjournment, viz: Messrs. Davis, Fitch, and Seaton.

No quorum being present, the meeting adjourned to the 9th instant, at 10 o'clock, a. m.

February 9, 1850.

The Board of Regents met, agreeably to adjournment, at 11 o clock, a. m.

Present, Messrs. Fillmore, Colcock, Davis, Fitch, Hilliard, Pearce, and Seaton.

The Chancellor took the chair, and the proceedings of the last meeting were read.

A verbal report on the proposition of Mr. Harmon, of Ohio, for the improvement of architecture in the United States, was made by the Secretary, accompanied by a synopsis of the plan. He stated that he considered no part of Mr. Harmon's plan to be absolutely at variance with the programme of organization, but he was not clear with regard to its practical application, and the propriety of its adoption. It might, however, be submitted to the public through the Regents' report to Congress.

The following is a synopsis of the plan referred to:

PART FIRST.

1. Invite architects to send to the institution designs for building.
2. Refer these to a commission, to comprise at least one practical architect.
3. The examiners to select from the number submitted, those of a certain degree of merit, to be honored with a place in the gallery.
4. The accepted designs to be re-executed, in a uniform and attractive style of art, before being placed in the gallery, and undersigned by the name of the architect.

PART SECOND.

1. Invite building committees, or others charged with the erection of public buildings, to send to the Smithsonian Institution, specifications, limit of cost, and amount of premium offered.
2. The Secretary to advertise, in the usual form, for designs, and to refer them to a commission of competent judges, one of whom to be a practical architect.
3. From among the designs submitted, the commissioners to select a few of the best and return them to the Building Committee, stating their preference, if any.
4. The plans of extraordinary merit, selected from among the designs submitted, shall be entitled to a place in the prize gallery.
5. The expenses of the commission for making the estimate, and advertising, shall be paid from a percentage on premiums accompanying the specifications.
6. A person well skilled in practical building to be employed, and the designs adopted, to be submitted to him for a correct estimate of the cost.

This synopsis being considered, the first article of the first part was adopted, after being amended by Mr. Davis, to read as follows:

Resolved, That architects be invited to send in designs for buildings, and that notice be given that models of ancient or modern architecture will be received by the Smithsonian Institution, and that such designs or models, at the discretion of the Regents, will be placed in the gallery of art.

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The second and third articles were struck out; and, on motion of Mr. Fitch, it was—

Resolved, That the fourth article be referred to a committee, consisting of the Secretary and Mr. Seaton, with instructions to ascertain from Mr. Harmon what is his plan of re-executing the architectural drawings, and the probable cost; and that the remainder of the synopsis be laid upon the table.

The Secretary laid before the Board the resignation of General J. G. Totten, as a member of the Building Committee; which was accepted.

The Board proceeded to fill the vacancy, and Mr. Davis was elected.

A map of the public grounds west of the Capitol was laid before the Regents, and their attention called to the recommendation of a general plan for improving the Mall.

The Secretary directed the attention of the Board to a part of the building contract which required elucidation, and requested that they would express their opinion as to the sum to be paid annually to the contractor; whereupon, the following preamble and resolution, offered by Mr. Fillmore, (Mr. Pearce being in the chair,) were adopted:

The Board of Regents having examined the building contract, for the purpose of determining its true construction:

Resolved, That, in the opinion of this Board, the contractor is only entitled, in each year, to forty-one thousand dollars for work done during that year, deducting therefrom 15 per cent., which is to be paid him at the end of the five years, with six per cent. interest.

The Secretary presented a report from Professor C. C. Jewett, on the subject of *copyright;* which was referred to a committee, consisting of Messrs. Davis, Mason, and Pearce.

The Board then adjourned to the 23d instant, at 10 o'clock, a. m.

February 23, 1850.

The Board of Regents met this day.

Present, Messrs. Fillmore, Bache, Fitch, and Seaton.

A quorum not being present, it was agreed to adjourn to Saturday, March 2d, 1850.

March 2, 1850.

The Board of Regents met this morning at 10 o'clock, in the Smithsonian building.

Present, Messrs. Bache, Colcock, Davis, Fitch, Hilliard, Mason, Pearce, and Seaton.

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In the absence of the Chancellor, Mr. Seaton was called to the chair.

The proceedings of the last meeting being read, the committee on Mr. Harmon's plans of architectural drawings made a report; which was read and adopted.

Mr. Davis moved that the further consideration of the fourth article of Mr. Harmon's synopsis be indefinitely postponed; which was carried.

Mr. Davis then offered the following resolution; which was adopted:

Resolved, That, although the Board do not deem it expedient to adopt Mr. Harmon's plan of executing architectural drawings; yet, for the purpose of placing in the institution, a specimen of a peculiar art of drawing architectural designs, the Executive Committee be authorized to engage Mr. Harmon to execute the elevation of the Smithsonian Institution in his peculiar style, with a view to placing it in the institution, if the Regents shall, upon examination, approve of so disposing of it.

The Secretary brought before the Board the subject of an accident which had happened since the last meeting, in the unfinished part of the building. He stated that, at about 6 o'clock, p. m., on Tuesday, the 26th ultimo, a portion of the interior framing and floors of part of the main building, intended to contain the museum of apparatus, fell down into the basement. He had himself just before left the ground; but as soon as he heard of the occurrence he returned to the building, and after ascertaining the character of the accident, he addressed a letter to the architect, in New York requiring his immediate attendance. He next gave directions that the part of the building containing the fallen timbers should be closed, and that everything should remain in the same condition until the arrival of the architect. Mr. Renwick reached Washington on Thursday morning, February 28th. Immediately afterwards, a meeting of the Building Committee was called, at which the state of the work was examined, and a request made that the architect, superintendent, and contractor, should each furnish a report on the cause of the accident.

These reports were presented to the Board, and the following resolution, offered by Mr. Fitch, was adopted:

Resolved, That the Building Committee be requested to take under consideration the reports of the architect, superintendent, and contractor, on the subject of the late accident; that they associate with them Professor Bache, General Totten, the Secretary of the Institution, and some competent and entirely impartial architect or architects; that they make a survey of the whole building, report the manner, faithfulness, and security in which the building contract has hitherto been executed, and upon the plan most proper in their estimation to repair the damages and finish that portion of the building in which the accident happened, and other unfinished portions thereof.

The Board then adjourned, to meet again at the call of the Secretary.

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April 20, 1850.

The Board of Regents held a meeting this day, at the call of the Secretary, at 10 o'clock, a. m., in the Vice-President's room at the Capitol.

Present, Messrs. Bache, Davis, Fillmore, Fitch, Mason, and Seaton.

The Chancellor being in the chair, the proceedings of the last meeting were read.

The Secretary made a communication from Mr. Harmon, in which he requested to substitute a view of another building for that of the Smithsonian Institution in making the drawing, in his style, for the gallery of art.

On motion of Mr. Davis, the subject was laid on the table.

The committee, on the part of the Regents, charged with the examination of the building, consisting of the Building Committee, together with Messrs. Bache, Totten, and the Secretary, made a report, including the report of the commission of architects appointed to examine the building; also the remarks of James Renwick, Jr., architect, upon the same.

On motion of Mr. Fitch—

Resolved, That the report of the committee on the building, and the accompanying documents, be recommitted for such further action as may be deemed necessary. Also—

Resolved, That the Building Committee be directed to take legal advice as to the power possessed by the Regents, under the contract, and the course to be pursued should it be found necessary to declare it void; and that notice thereof be given to the contractor.

On motion of Mr. Bache—

Resolved, That the thanks of the Board of Regents be transmitted to the Hon. E. G. Squier, Esq., United States chargé d'affaires at Guatemala, for the gift of aboriginal relics recently made by him to the Smithsonian Institution.

On motion, the Board adjourned, to meet at the call of the Secretary.

June 1, 1850.

The Board of Regents met this day, at the call of the Secretary, at 11 o'clock, a. m., in the Smithsonian building.

Present, Messrs. Fillmore, Fitch, Hilliard, Pearce, Seaton, and Totten.

The Chancellor took the chair, and the proceedings of the last meeting were read.

The Secretary laid before the Board a proposition from Francis Markoe, Esq., relative to the deposit, in the Smithsonian building of his cabinet of minerals, with a view to their future purchase.

Whereupon, on motion of Mr. Colcock, it was—

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Resolved, That the Board decline the proposition of accepting the deposit with the view to a future purchase.

The Secretary stated that the portrait of James Smithson, which was ordered to be purchased at a previous meeting, had been received from England; and also, that five volumes of an Encyclopedia, formerly the property of James Smithson, had been purchased through the Hon. Abbott Lawrence.

On motion of Mr. Davis, it was—

Resolved, That the thanks of the Board be returned to the Hon. Abbott Lawrence, for the attention he has given to the interests of the institution abroad.

On motion of Mr. Seaton, it was—

Resolved, That the Secretary and chairman of the Executive Committee be appointed a committee, whose duty it shall be to report a system of keeping and disbursing the funds of the institution.

The Secretary next brought before the Board a proposition to ask Congress to receive from the institution $150,000, to be funded as an irredeemable 6 per cent. stock, to be added to the principal of the Smithsonian bequest.

The following resolutions in reference to this, offered by Mr. Seaton, were adopted:

Resolved, That the Chancellor and Secretary be authorized to sell $200,000 of stock of accrued interest, or any part thereof, not less than $150,000, the proceeds to be deposited to the credit of the Chancellor and Secretary, subject to be drawn at any time, with Corcoran & Riggs, at not less than 4 per cent., provided that they shall give security therefor, in United States stock.

Resolved, That whatever the premium on the above stock, when sold, shall amount to, it be deposited, subject to be drawn for the current expenses of the institution, on requisition in the usual form.

Resolved, That it is expedient to enlarge the permanent fund of this institution, by the investment of such sums, not exceeding $200,000, as may have been or shall be received for accrued interest, or otherwise, in addition to the principal sum of the Smithsonian bequest, augmenting the principal sum to that amount; and that application be made to Congress to receive such sums, not exceeding $200,000, as may have been or shall be received for accrued interest, or otherwise, into the United States Treasury, upon the same terms on which the original bequest has been received.

On motion of Mr. Pearce—

Resolved, That the Secretary be requested to communicate a copy of this resolution to Congress, and to request that provision be made by law, in accordance therewith.

The Secretary next brought forward the subject of the contract for the building. The letter of J. M. Carlisle, Esq., the counsel employed to give an opinion of it, was read.

On motion of General Totten, it was—

Resolved, That the committee on the building be authorized to negotiate a compromise with the contractor, relative to the defective work and materials in the Smithsonian building, and also with regard to a modification of the contract, subject to the approval of the Board of Regents at their next meeting.

The Secretary laid before the Board a volume of magnetical and meteorological observations, made at Toronto, Canada, and presented to the institution by the British Government. The Board

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being informed that the duration of the Toronto Observatory is limited by law, on motion of Mr. Seaton, it was—

Resolved, That the Chancellor and Secretary be requested to acknowledge the receipt of the volume, with the expression of the hope of this Board that Her Majesty's Government may find it expedient to continue an institution of such utility to science.

July 3, 1850.

The Board met this day, at the call of the Secretary, in the Smithsonian building, at 9 a. m.

Present, Messrs. Fillmore, Colcock, Davis, Fitch, Hilliard, Mason, and Pearce.

The Chancellor took the chair.

Mr. Lenox, elected mayor of Washington, and ex-officio Regent of the Smithsonian Institution, appeared and took his seat.

The journal of proceedings of the last meeting was read and approved.

The Secretary presented the final report of the committee charged with the examination of the building, which was read as follows:

Final Report of the Committee of the Regents charged with the examination of the building.

Under the resolutions of March 2, and April 20, 1850, offered by Mr. Fitch, and also the resolution of June 1, 1850, offered by General Totten, the committee charged with examinations relative to the building submit the following report:

In accordance with the first resolution of Mr. Fitch, the committee associated with themselves three distinguished architects, viz: Col. William Turnbull, of the United States topographical engineers; Edward B. White, Esq., of Charleston, South Carolina; and John R. Niernsee, Esq., of Baltimore, Maryland. These gentlemen were highly recommended as practical architects and engineers, of established reputation, and the committee have full confidence in their experience, judgment and integrity.

The committee are indebted to the Hon. Alexander Evans, of Maryland, for an examination of the building, with reference to a comparison of the different reports; and to Mr. Joel Downer, for an additional inspection and opinion as to the character of the timber and wood-work. In accordance with the second resolution of Mr. Fitch, they have also taken legal advice as to several points of the contract.

After a careful study of the reports of the contractor, superintendent, Mr. Renwick, the commission of architects, and of Mr. Evans, also the written opinion of their legal adviser, the committee have unanimously arrived at the following conclusions, which they respectfully submit for the consideration and action of the Board:

1. That the workmanship of the cut-stone of the exterior is good, and the masonry generally, though in some respects not of the best quality, is of a passable character with reference to the terms of the contract.

2. That the interior of the main building is defective in the kind of materials originally adopted, and to a considerable degree in the quality of the materials employed. These consist principally of wood, and are not of a proper character for a building intended to contain valuable deposits, many of which will be donations to the institution, presented with the implied condition that they are to be properly secured against danger from fire. This mode of construction was probably adopted by the original Building Committee, in order to lessen the cost of the edifice, and to bring it within the sum appropriated by the Board.

3. Although the committee are anxious to save the accrued interest, and to devote it to objects more in accordance with the spirit of the original bequest than the erection of a costly building; yet, they would recommend that the interior work of the centre building, as now existing, be removed, and that there be substituted for it a fire-proof structure, in accordance with the plan recommended in the reports of Mr. Renwick, and of the commission of architects.

4. The completion of the building on this plan, according to the estimate of the

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commission, requires an additional outlay of about $44,000. To meet this additional expense, the committee recommend the adoption of the suggestion of their chairman, Col. Davis, that the exterior of the building and the interior of the towers be completed in accordance with the plan, and within the time specified by the contract, and that the remainder of the interior be finished agreeably to the new plan, in the course of a number of years, and in such portions as can be paid for out of the annual interest of the Smithsonian fund, not otherwise appropriated. The object of this part of the proposition is to prevent the derangement of the plan of finance originally proposed by Dr. Bache, and adopted by the Board of Regents, viz: of saving out of the accrued and accruing interest, after paying for the building, the sum of $150,000, to be added to the principal.

5. By the addendum to the contract, the Regents have the power of stopping the building at any stage of its progress, on paying the contractor *pro rata* for the work done, according to the prices specified in the contract, and allowing for reasonable damages if the circumstances require the payment of them. The estimates in this case are to be made by the architect of the institution, or other architects selected by the Regents. But with reference to the quality of the work which has been done, it is the opinion of the legal adviser of the committee that the decision of the architect of the building is final, both with regard to the Regents and the contractor.

6. In accordance with the forementioned stipulations of the contract, the committee have requested Mr. Renwick to furnish an estimate *pro rata* for completing the whole exterior of the building, and the interior of the towers, making deductions for materials and workmanship which he would have condemned, had the building been completed according to the original plan. The following is the decision of the architect, which has been agreed to by the contractor, with the understanding that nothing is to be paid him on account of profit on work omitted by the proposed change, viz:

For finishing the whole exterior of the building, all the interior rooms of the towers and of the wings, the sum of $185,154

7. The committee recommend to the Board of Regents that they agree to this proposition, and that a resolution be adopted directing the contractor to proceed with the work in accordance therewith. In recommending this course to the Board, the committee act in conformity with the advice of two of the commission of architects, viz: Mr. E. B. White and Mr. J. R. Niernsee, who undertook the examination in detail of the parts of the building, and gave an estimate as the basis of an equitable settlement.

8. By adopting the above sum of $185,154, as the amount to be paid to the contractor, Mr. Renwick gives the following estimate of the cost of finishing the building in accordance with the fire-proof plan, viz:

Amount of proposed contract			$185,154
Expense of fire-proofing the entire centre building according to plans and estimates of the architects			44,000
Plastering centre building,	Expenses common to both plans.	$8,000	
Gallery fronts,		2,000	
Staircase of Library and Museum,		425	
Furniture of " "		4,700	
			15,125
Extra cartage			200
Materials now on the ground, but which may not be used			1,000
Total expense of the building, including fire-proofing			245,479
9. The original contract, with the addition made to it by direction of the Building Committee, is			$209,810
Add the estimate of fire-proofing			44,000
Thus we have for the cost of the building, according to the estimate of the commission			253,810

NOTE.—The foregoing estimates are exclusive of the salaries of the architect and superintendent; also of the cost of the improvement of the grounds and part of the furniture.

This last sum is greater than the preceding, by $8,331. The difference, according to the statement of Mr. Renwick, is due to the various deductions he has made on account of defective materials, imperfect workmanship, and changes in the plan.

In conclusion, the committee are fully of opinion—and in this they are sustained by the commission of architects—that, by adopting the plan of fire-proofing proposed

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by Mr. Renwick, and the proposition of the contractor, the building will be rendered safe and durable, at a very reasonable cost, considering the amount of work which has been bestowed upon it.

The committee do not consider it necessary to offer any remarks on the cause of the accident which led to these investigations. If these recommendations be adopted, the whole structure of the interior of the main building, in which the accident occurred, will be exchanged for one more in accordance with the permanence and utility of the edifice; and in this case they will consider the accident as a fortunate event.

All of which is respectfully submitted.

JEFFERSON DAVIS, *Chairman.*
W. W. SEATON.
H. W. HILLIARD.
JOS. G. TOTTEN.
ALEX. D. BACHE.
JOSEPH HENRY.

On motion of Mr. Pearce, it was—

Resolved, That the report of the committee of the Board of Regents charged with the examination of the building, presented this day, be accepted; and that the Building Committee be directed to proceed with the work, in accordance with the recommendation thereof.

The following resolution, offered by Mr. Davis, and amended by Mr. Fitch, was adopted:

Resolved, That the Executive Committee be authorized to advance to the contractor within the year ending 19th March, 1851, in addition to the sum which he is now allowed to expend upon the building within the aforesaid year, the sum of $17,980, in proportion to work done in addition to what would otherwise have been done, and on condition of his paying interest at the rate of six per cent. per annum upon the said advance from the time at which he receives it to March 19, 1851.

The committee, consisting of the Secretary and chairman of the Executive Committee, to whom was referred a resolution directing them to report a system of keeping and disbursing the moneys of the institution, reported the following resolutions; which were read, and, on motion, adopted:

Resolved, That the Secretary be authorized to appoint an assistant, to act as treasurer, to take charge of the funds for the current expenses of the institution, who shall give security for the safekeeping of all money belonging to the institution which shall come into his possession:

That the funds before mentioned be deposited, until otherwise ordered, with Messrs. Corcoran and Riggs, to the credit of the treasurer of the institution:

That all bills presented for payment shall be audited and certified by the Secretary, on whose order the treasurer shall pay them:

That the treasurer report to the Secretary, monthly, all payments made by him during the preceding month:

That all the monthly accounts be examined and certified by the Executive Committee quarterly.

That the account books be kept in the Smithsonian building, so that the Secretary and Executive Committee may have ready access to them.

The Secretary then nominated Mr. Seaton as a suitable person to perform the duties of treasurer, and the nomination was unanimously confirmed by the Board.

The Secretary stated to the Board that Mr. Seaton would accept the office of treasurer, but would not consent to receive any compensation for his services.

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The following resolution, offered by Mr. Mason, was unanimously adopted:

Resolved, That the thanks of the Board be, and they are hereby, tendered to the Hon. W. W. Seaton, late mayor of the city of Washington and *ex officio* Regent of the Smithsonian Institution, for his able and valuable services as a member of the Board, now terminated by the expiration of his term of office as mayor of Washington.

On motion, the Board adjourned to meet on Friday morning, 5th instant, at 9, a. m.

July 5, 1850.

The Board of Regents held a meeting this day, at 9 a. m., in the east wing of the Smithsonian building.

Present, Messrs. Fillmore, Colcock, Davis, Fitch, and Lenox.

The Secretary stated that vacancies in two committees of the Board were occasioned by the retirement of Mr. Seaton, whereupon, on motion of Mr. Fitch, it was—

Resolved, That General Totten be appointed a member of the Executive Committee.

Also, on motion of Mr. Davis, it was—

Resolved, That Mr. Lenox be appointed a member of the Building Committee.

The Secretary stated that, in order to the development of the plans of the institution, it was necessary that additional assistants should be appointed. With the officers now engaged, little more could be done than to attend to the general correspondence, which now extends to every part of the world, and the details of business, which have been continually increasing. The labor of reading manuscripts and attending to the press, would almost occupy the time of one individual. He therefore requested that he might be allowed to appoint an assistant in the department of natural history, to take charge of the museum and aid in the publications, &c.

On motion of Mr. Davis, it was—

Resolved, That the Secretary be authorized to appoint an assistant secretary in the department of natural history, to take charge of the museum, and to render such other assistance as the Secretary may require, at a salary of fifteen hundred dollars per annum.

The Secretary thereupon appointed Professor Spencer F. Baird under the foregoing resolution; and, on motion, the Board approved the appointment.

The Secretary then stated that Dr. Edward Foreman had been engaged during the past year as a general assistant; that he had been elected professor of chemistry in the National Medical College of this city, the duties of which, however, did not materially interfere with his labors in the Smithsonian Institution; and the Secre-

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tary requested that his connection with the institution might be placed on a more permanent basis.

Whereupon, on motion of Mr. Fitch, it was—

Resolved, That the Secretary be authorized to appoint a general assistant, at a salary of twelve hundred dollars per annum.

The Secretary thereupon, under the foregoing resolution, appointed Dr. Edward Foreman; and, on motion, the Board approved the appointment.

The following resolution, offered by Mr. Colcock, was adopted:

Resolved, That a sum not exceeding twenty thousand dollars be appropriated for the current expenses of this year; the objects of the expenditure to be those designated in the programme of the institution, and the allowance to each to be fixed by the Executive Committee.

The Secretary presented to the Board a plan, by Professor Jewett, for stereotyping or electrotyping catalogues of libraries, *by titles*, in a uniform style, and of forming a general stereotype catalogue of the public libraries of the United States. The Secretary stated that this was a proposition which appeared to him of great importance in carrying out the objects of the institution, and in rendering available the aids to literary labor now in our country. He suggested that the proper course would be to refer it to the Secretary and Executive Committee, to be referred by them to a commission of literary gentlemen for examination.

On motion, the subject was referred to the Secretary and Executive Committee.

On motion, the Board adjourned to meet again at the call of the Secretary.

January 1, 1851.

The Board of Regents met this day at 12 o'clock, noon, in accordance with notice previously given.

On motion, Mr. Hawley was called to the chair.

The Secretary stated that a few days would be required to make up the accounts for the year just expired, and that a quorum of the Regents was not present.

Whereupon, on motion, the meeting adjourned to Tuesday, 7th instant, at 10 o'clock, a. m.

January 7, 1851.

The Board of Regents met this day, at 10 o'clock, a. m., according to adjournment.

Present, Messrs. Bache, Davis, Fitch, Hawley, Hilliard, Lenox, Mason, Pearce, Rush, and Totten.

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Mr. Hawley took the chair, and the proceedings of the last meeting were read.

The Secretary made a statement relative to the election of a chancellor, the office being vacant by the elevation of Mr. Fillmore to the Presidency of the United States.

On motion of Mr. Davis, it was—

Resolved, That the Board proceed to elect, by ballot, a Chancellor of the Smithsonian Institution, whose term of office shall continue until the 4th day of March, 1853.

Tellers having been appointed, the votes were counted, and the Honorable Roger B. Taney, Chief Justice of the United States, was declared unanimously elected.

The report of the Executive Committee for the year 1850, was then presented, and read by Mr. Bache.

On motion, it was laid on the table, until the Treasurer's statement could be prepared.

The reading of the Secretary's annual report, relative to the operations of the institution for the past year, was then commenced.

An account was given of the several memoirs presented during the past year, and copies of all that had been printed during the same time, were placed upon the table.

The hour of adjournment having arrived, on motion, the Board adjourned to meet on Friday, the 10 instant, at 10 o'clock, a. m.

January 10, 1851.

The Board of Regents met this day at 10 o'clock.

The Honorable Roger B. Taney appeared and took the chair, as Chancellor of the Smithsonian Institution.

The following members were present, Messrs. Bache, Davis, Fitch, Hawley, Hilliard, Lenox, Mason, Pearce, Rush, Totten, and Mr. Seaton, Treasurer of the Institution.

The Chancellor, on taking the chair, expressed his thanks for the honor conferred upon him by his election; his regret that on account of the meetings of the Supreme Court, he had not previously been able to attend the sessions of the Board, though he hoped in future to be able to do so; also the interest he felt in the institution, and his gratification with reference to its present condition.

The proceedings of the last meeting were then read.

The Building Committee presented their annual report, including a report from the architect. It was, on motion, accepted, and ordered to form a part of the Regents' report to Congress.

In connection with the report of the Building Committee, Mr. Lenox made a statement relative to a proposition for the erection

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of a foot bridge over the canal at Ninth or Tenth street, at the expense of the corporation of the city of Washington, for facilitating the approach to the institution. He also stated that Mr. Ellet, the engineer, had offered to superintend, free of charge, the erection of a wire bridge at the place mentioned, and expressed his belief that a bridge could be constructed during the present year.

Mr. Seaton, the treasurer, presented a report of the moneys placed to his credit on account of the institution, and the manner in which they had been expended. At the request of Mr. Seaton, and on motion of Mr. Davis, the report was referred to the Executive Committee for examination.

The reading of the Secretary's report was then proceeded with, including a statement relative to the foreign distribution of the first volume of Smithsonian Contributions, and the method of keeping the account of the exchanges with foreign societies; also an account of the progress made in the operations relative to meteorology.

Specimens of the barometers, thermometers, rain gauges, and wind vanes prepared for the Smithsonian observers, were exhibited to the Board.

The Board, on motion, then adjourned to meet on Saturday next, 18th instant, at 10 o'clock, a. m.

January 18, 1851.

The Board of Regents met this day at 10 o'clock, a. m.

Present, Messrs. Bache, Colcock, Davis, Hilliard, Pearce, and Rush. The Chancellor being absent, Mr. Pearce was called to the chair.

The proceedings of the last meeting were read.

Mr. Bache, on behalf of the Executive Committee, presented a detailed statement of all the expenditures from the beginning of the institution to the end of the year 1850, classified according to the programme of accounts before given.

The Secretary stated, that in obedience to the instructions contained in the resolutions of the Board adopted June 1, 1850, the following petition relative to funding $150,000 of accrued interest had been drawn up for presentation to Congress; but owing to the press of business of last session, and by the advice of the members of the Board belonging to the Senate and House of Representatives, it had not been presented up to the present time.

Mr. Davis suggested that the petition be amended by inserting

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the words "making in all a principal fund of $715,000," at the close of the fourth paragraph; which was agreed to.

Amended, the petition reads as follows:

To the Honorable, the Senate and House of Representatives, in Congress assembled:

GENTLEMEN: The Board of Regents of the Smithsonian Institution have directed me to transmit to your honorable body, the resolutions appended to this letter, and to solicit the passing of a law, in accordance therewith.

It is known to your honorable body, that the original sum received into the United States Treasury from the Smithsonian bequest, was a little more than $515,000, and that at the time of the passage of the act incorporating the institution, $242,000 had accrued in interest, which sum or so much of it as might be deemed necessary, the Regents were authorized to appropriate to a building. It is also known to your honorable body, that the act of incorporation directed that provision should be made for the establishment of a library and museum, together with the erection of a building on a liberal scale to contain them.

While the Regents in their plan of organization obeyed these instructions, they also by virtue of the power invested in them, and in conformity with the terms of the bequest, adopted additional plans for the more immediate promotion of the increase and diffusion of knowledge among men, by means of researches, publications, lectures, &c.

In order, however, to carry out the several parts of this more extended plan, it was found absolutely necessary that the annual income of the institution should be increased. To accomplish this, it was resolved, instead of expending at once the $242,000 on a building, carefully to husband the same and to erect the building in the course of several years, in part out of the proceeds of the sum before mentioned, and in part out of such portions of the income of the original fund as could be spared from the ordinary operations of the institution. This scheme has been effectually carried out, and the Regents now ask to be allowed to place in the Treasury of the United States along side of the original bequest, and upon the same terms, never to be expended, the sum of $150,000 of accrued interest, and to be allowed to add to this from time to time, such other sums as may come into their possession by donation or otherwise, until it, with the sums thus added shall amount to $200,000, making in all a principal fund of a little more than $715,000.

After this deposit of $150,000, the Regents will still have sufficient money on hand to finish the whole of the exterior of the building, and such portions of the interior in addition to those now completed, as may be wanted for several years to come, they then propose gradually to finish the remainder in such portions as may be wanted out of the annual accruing interest.

The sole object of the request is the permanent investment and perpetual security of the accumulated fund, and when your honorable body is assured that the organization and operations of the institution have received the approbation of the wise and good, not only in this country, but in every part of the world where literature and science are cultivated, the undersigned trusts that the request will be granted.

And your petitioner will ever pray, &c.

(Signed) JOSEPH HENRY,
Secretary of the Smithsonian Institution.

Resolutions of the Board of Regents of the Smithsonian Institution, adopted at their meeting of June 1, 1850, and appended to the foregoing petition.

Resolved, That it is expedient to enlarge the permanent fund of the institution, by the investment of such sums not exceeding $200,000 as may have been, or shall be received for accrued interest or otherwise, in addition to the principal sum of the Smithsonian bequest, augmenting the principal sum to that amount, and that application be made to Congress to receive such sums not exceeding $200,000 as may have been or shall be received for accrued interest or otherwise into the United States Treasury upon the same terms on which the original bequest has been received.

Resolved, That the Secretary be requested to communicate a copy of this resolution to Congress, and to request that provision be made by law in accordance therewith.

The Secretary also brought before the Board, the subject of the remainder of the Smithsonian bequest, left as the principal of an

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annuity payable to Madame de la Batut, mother of the nephew of James Smithson.

Mr. Rush gave an account of this annuity and stated that he had left the business in the hands of attorneys, to whom he had written in 1846. A copy of this correspondence was read, and Mr. Rush was requested to communicate with the above mentioned persons relative to this business.

The reading of the Secretary's report was then continued, including Professor Jewett's report on the library, illustrated by specimens of a new plan of stereotyping catalogues of libraries by separate titles.

On motion, the Board adjourned to meet on Saturday, 25th instant, at 10 o'clock, a. m.

January 25, 1851.

The Board of Regents met this day at 10 o'clock, a. m.

Present, Messrs. Davis, Fitch, Lenox, Mason, Pearce and Taney.

The Chancellor occupied the chair.

The proceedings of the last meeting were read.

The reading of the Secretary's report was then continued, including the report of Professor Baird on the Museum.

On motion of Mr. Davis, it was—

Resolved, That the thanks of the Board be presented to Mr. Alexander Culbertson, for the liberal aid rendered by him in procuring specimens of natural history for the institution; also, to Messrs. Edward T. Denig, Ferdinand Culbertson, and the other gentlemen of the American Fur Company mentioned in Professor Baird's report for similar services.

The concluding portion of the Secretary's report was then read, giving an account of the lectures which had been delivered, and other miscellaneous operations. The Secretary then gave an account of some experiments made with the Smithsonian apparatus by Mr. Espy during the past year, and the connection which has existed between this gentleman and the institution. An appropriation has been made for several years past by Congress for meteorology, out of which Mr. Espy has been paid. The appropriation was under the direction of the Secretary of the Navy, who, in 1848, directed Mr. Espy to co-operate in his labors with the Smithsonian Institution.

Mr. Lenox presented a communication from Mr. Seaton recommending the placing of a bell in one of the towers of the Smithsonian building, and stating that a very valuable town clock could probably be obtained from the Treasury Department.

On motion of Mr. Fitch, it was—

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Resolved, That Mr. Lenox be appointed a committee to inquire into and report upon this proposition.

The Board then adjourned to meet again at the call of the Secretary.

February 27, 1851.

The Board of Regents met this evening at 6 o'clock, in the anteroom of the Senate Chamber.

Present, Messrs. Bache, Colcock, Davis, Fitch, Lenox, Mason, Pearce, and Totten.

In the absence of the Chancellor, Mr. Pearce was called to the chair.

The proceedings of the last meeting were read.

Mr. Bache, from the Executive Committee, offered the following resolution; which was adopted:

Resolved, That during the year 1851, the sum of twenty-five thousand dollars be, and is hereby, appropriated to be expended under the direction of the Secretary, and with the advice of the Executive Committee for the expenses of the institution, and to carry out the several parts of the programme of organization.

On motion of Mr. Mason, it was—

Resolved, That the report of the Secretary and of the Executive Committee be adopted, and form parts of the report of the Regents to Congress.

On motion of Mr. Colcock, it was—

Resolved, That the Chancellor and Secretary be authorized to make the annual report of the Regents to Congress.

A bill was presented to the Board from W. Fischer, for stationery purchased in 1847 and 1848, on account of the Executive and Building Committee, prior to the present system of keeping accounts.

On motion of Mr. Fitch, it was referred to the Executive Committee for examination, and if found correct, for payment.

The Secretary called attention to the statement in the report of the Executive Committee, that in the examination and re-arrangement of the accounts of the institution, there had been found a few cases in which payment had been made in accordance with the spirit of the resolutions of the Board, but which could be referred to no special appropriation.

On motion of Mr. Fitch, it was—

Resolved, That these accounts be referred to the Executive Committee for examination, and if deemed correct, for approval.

The Secretary informed the Board that it was necessary to publish a new edition of the programme of organization and suggested

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the propriety of making a few verbal alterations in the text, and in the sentence beginning as follows:

"Rewards [consisting of money, medals, &c., offered for original memoirs."]

Of striking out the words included in brackets; which was agreed to.

On motion of Mr. Mason, it was—

Resolved, That the Secretary be authorized to employ an accountant at an annual salary of two hundred dollars, and to assign his duties, and that that there be paid to William B. Randolph, two hundred dollars for the arrangement of the accounts to date, as reported.

On motion of Mr. Bache, it was—

Resolved, That the Secretary be authorized to appoint an agent abroad to conduct the exchanges of the institution, with a salary not to exceed one hundred and fifty dollars per annum.

Mr. Davis submitted the following resolution; which was adopted:

Resolved, That the Executive Committee be requested to inquire into the expediency of providing buildings for the residences of the officers of the institution on the Smithsonian grounds, or other convenient location, if they deem expedient to report plans and estimates for such buildings to the Board at their next meeting.

Mr. Lenox, to whom was referred the subject of procuring a clock and bell for the institution, reported that the use of a clock could be obtained free of expense to the institution, provided a bell of a large size could be arranged in connection with it, in one of the towers of the Smithsonian building; also, that he thought it probable that the corporation of the city of Washington would defray one-half of the cost of such a bell, provided that the institution would pay the other.

Mr. Mason then offered the following resolution; which was agreed to:

Resolved, That the Secretary be authorized to purchase a bell, to be placed in one of the towers of the building to be attached to a clock, provided that the purchase be made in association with the authorities of the city of Washington, and that the size and tone of the bell be approved of by the Executive Committee and the said authorities, the sum to be paid on the part of this institution, not to exceed five hundred dollars.

The plan of Mr. Downing for the improvement of the public Mall, including the grounds of the Smithsonian Institution, was exhibited to the Board

On motion, the Board then adjourned *sine die*.

January 7, 1852.

In accordance with the resolution of the Board of Regents of the Smithsonian Institution, fixing the time of the beginning of their annual meeting on the first Wednesday of January of each year, the Board met this day in the Smithsonian building, at 12 o'clock, noon.

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A quorum not being present, the Board adjourned to Saturday, the 10th instant.

January 10, 1852.

Agreeably to adjournment, the Board of Regents met this day at noon.

Present, Messrs. Bache, Fitch, Lenox, Mason, Pearce, and Rush, of the Board; and Mr. Seaton, treasurer.

The Secretary informed the Board of the reappointment of Mr. Fitch, of Indiana, and Mr. Colcock, of Georgia, and the appointment of Mr. Meacham, of Vermont, as Regents on the part of the House of Representatives of the present Congress.

The Secretary also stated that the accounts and reports of the institution would be ready for presentation at the next meeting; whereupon, the Regents, after examining the several parts of the establishment, adjourned to meet on Saturday next at 10 o'clock.

January 17, 1852.

The Board met this day, agreeably to adjournment.

Present, Mr. Taney, Chancellor; Messrs. Bache, Fitch, Lenox, Pearce, Rush, and Totten, of the Board; and Mr. Seaton, treasurer.

The report of the Executive Committee was presented by the chairman, (Mr. Bache;) was read, and ordered to lie on the table.

The report of the Building Committee was presented by Mr. Lenox, chairman, and was read.

On motion, the above reports were adopted.

The annual report of the Secretary, giving an account of the condition of the institution and of the operations of the past year, was presented, and a part of the same read.

Copies of the memoirs and reports published by the institution during the past year were placed on the table for the inspection of the Board.

A letter from Gilbert Cameron, contractor for the building, asking for an advance of money from the fund withheld as security for the proper performance of his contract; and a letter from James Renwick, Jr., architect, approving of the part payment of the same, were read; whereupon, on motion of Mr. Pearce, it was—

Resolved, That the Chancellor fill the places in the Building Committee which were occupied by Messrs. Davis and Hilliard.

The Chancellor appointed Messrs. Rush and Fitch, who signified their acceptance.

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On motion of Mr. Totten, it was—

Resolved, That the Secretary be added as a member of the Building Committee.

The letters of Messrs. Cameron and Renwick were then referred to the Building Committee to be reported on at the next meeting.

On motion, the Board adjourned to Saturday, the 24th instant, at 11 o'clock, a. m.

January 24, 1852.

The Board met at 11 o'clock, a. m.

Present, Mr. Taney, Chancellor; Messrs. Bache, Colcock, Fitch, Lenox, Meacham, Pearce, Rush and Totten, of the Board; and Mr. Seaton, treasurer.

The Building Committee, to whom were referred the letter of Gilbert Cameron, making application for an advance of $10,000 from the amount of percentage retained as security for the completion of his contract, and also the letter of James Renwick, Jr., architect, reported that they had examined the subject, and requested to submit the following resolution; which, on motion, was adopted:

Resolved, That in accordance with the recommendation of the architect, the Executive Committee be authorized to advance to the contractor the sum of $6,000 from the amount retained as security for the completion of his contract.

The Secretary brought before the Board the subject of the disposition of the accrued interest. He stated that, since the last meeting of the Regents, he had conferred with Mr. Corcoran on the subject, and had received from him the following proposition, viz: Messrs. Corcoran & Riggs will give sixteen per cent. premium on the stock belonging to the institution, will allow five per cent. interest on the whole sum including the premium, until an investment can be made, and make a deposit of Government stocks as security for the safe keeping of the money.

Whereupon, Mr. Pearce offered the following resolution; which was adopted:

Resolved, That the Chancellor and Secretary be requested to sell $180,000 of stock of accrued interest upon the terms stated in the resolution of June 1st, 1850, and to deposit the proceeds of such sale with Corcoran & Riggs for the purposes, and on the security therein mentioned.

Mr. Fitch offered the following resolution; which was adopted:

Resolved, That Mr. Pearce be requested to have the memorial, relative to the reception of the accrued interest by Congress, taken from the files of the Senate and referred to the Committee of Finance.

The reading of the Secretary's annual report was then continued, including the report from Professor Jewett, in charge of the library, giving the details of the operations in this department during the

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past year. Specimens of titles for catalogues, separately stereotyped and printed, were laid before the Board.

Mr. Rush offered the following resolution; which was adopted:

Resolved, That a copy of the special report of the Secretary be furnished for publication to the *National Intelligencer* immediately after it shall be sent to Congress.

The Board then adjourned, to meet on Saturday, 31st instant, at 10 o'clock.

January 31, 1852.

The Board met this day at 11 o'clock, a. m.

Present, Mr. Taney, Chancellor; Messrs. Colcock, Mason, Meacham and Totten.

The Secretary communicated to the Board a copy of the will of Thomas Wynns, late of Brooklyn, New York, deceased, which contains a contingent devise or legacy to the Smithsonian Institution. It is as follows:

In the name of God: Amen.

I, Thomas Wynns, of the city of Brooklyn, county of Kings, and State of New York, being in feeble bodily health, but of sound and disposing mind, do make, publish, and declare this my last will and testament, hereby revoking and declaring null and void all other and former wills by me made.

First. I give and bequeath unto my beloved wife, Charlotte, all my plate and household furniture, or such of it as she may select, and all my books and pictures she may desire.

Second. I give, devise, and bequeath to my executors and trustees hereinafter named, or such of them as shall qualify themselves to act under this my will, the survivors and survivor, all my estate, real and personal, and the rents and profits of my real estate upon the trusts hereinafter mentioned, that is to say, to pay to my said wife yearly and every year during her natural life the annual sum of fifteen hundred dollars lawful money of the United States of America, such payment to be made quarterly, and the first payment to be made at the termination of the first quarter, or three months after my decease.

Further to apply to the use, maintenance, and education of my daughter, Charlotte Arthur, the annual sum of five hundred dollars, which annual sum may be increased in the discretion of my executors as the advancing age of my daughter may require, until her marriage, and upon her marriage she shall receive the whole income over and above the annuity to my wife during her natural life, and in case of her marriage the income shall be paid to her for her own use, upon her own receipt, without the control of her husband, and free from all his debts. Upon the decease of my said daughter the said real and personal estate, or the proceeds and accumulations thereof, shall be equally divided between or among her issue, share and share alike, the issue of children to stand in place of their parent; or if she should die without issue, ten thousand dollars shall be paid to my friend, John George Anderson, of Florida, and the residue to the Smithsonian Institute at Washington, as I know no benevolent institution more useful or appropriate. A sufficient and ample fund shall, however, be always reserved to secure the annuity to my wife.

Third. I nominate, constitute, and appoint my friends, John George Anderson of Florida, Edwin Coffin, of New York, and Charles A. Coe, of the same place, and the Rev. Francis Vinton, of Brooklyn, doctor of divinity, to be the executors of this my last will and testament and trustees as hereinbefore mentioned, and guardians of my said daughter, with full power of sale and conveyance, to such of them as may qualify, the survivors and survivor of them.

In witness whereof I have hereunto set my hand and affixed my seal.

THOMAS WYNNS. [L. S.]

Signed, sealed, published and declared by the testator for and as his last will and testament in our presence, who, at the same time, at his request, in his presence, and

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in presence of each other, have become witnesses hereto this 14th day of February, in the year 1851.

JOSEPH VANNINI,
102 Joraclimon street, Brooklyn.
WILLIAM BETTS,
of Jamaica.

Codicil.

I give and bequeath to my friend, Edwin Coffin, the sum of five thousand dollars, in trust for my daughter, Rosina, now at Turk's island.

his
THOS. + WYNNS.
mark.

Witness:
JOHN ARTHUR, JR.,
F. E. LINDSAY.

BROOKLYN, 21*st February*, 1851.
Will proved March 8th, 1851.

On motion of Mr. Colcock, it was—

Resolved, That the said will be referred to Mr. Mason, with a request that he would correspond with an agent in New York, to ascertain the value of the estate so devised, and whether any and what measures may be necessary to preserve and secure the interests of the institution under the said will.

The Secretary informed the Board that since the last meeting he had taken the certificates of the stock belonging to the institution, amounting to $180,000, from the safety vault of the Secretary of the Senate, and had given them in charge to Messrs. Corcoran & Riggs on the terms prescribed by the Board at their last meeting. He also stated that the certificates were not yet finally transferred to the bankers, but stand in the name of the Chancellor and Secretary as security for the stock itself. On the proceeds of this stock, which at sixteen per cent. premium amounts to $208,000, the institution is to receive interest at the rate of five per cent. per annum.

The Secretary was requested to obtain from Messrs. Corcoran & Riggs a written account of the agreement with reference to the aforementioned transaction.

The Board then adjourned to Saturday, the 14th of February next.

February 14, 1852.

The Board met this day at 11 o'clock, a. m.

Present, Mr. Taney, Chancellor; Messrs. Colcock, Fitch, Lenox, Mason, Meacham, and Totten, of the Regents; and Mr. Seaton, treasurer.

The Secretary presented a written statement from Messrs. Corcoran & Riggs relative to the sale of stock belonging to the institution, and the deposit of the certificates of United States stock as security therefor.

A proposition was submitted from Dr. H. Stone, of New York,

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to furnish designs for a monument in commemoration of James Smithson. An explanation of the designs exhibited was read.

On motion of Mr. Mason, it was—

Resolved, That Dr. Stone's proposition lie on the table.

The Secretary communicated a proposition from Henry Stevens, of London, to obtain facts relative to the life of James Smithson.

The following preamble and resolution, submitted by Mr. Mason, was adopted:

It being represented to the Board that Mr. Henry Stevens, now of London, has proposed to collect certain authentic materials in Europe, which may be useful for a future memoir of the life and character of James Smithson, the founder of the institution, and without compensation for such services;

Resolved, That the Secretary be authorized to accept the offer of Mr. Stevens, and to appropriate a sum not exceeding fifty dollars for this object.

The Secretary laid before the Board a communication from Joseph Bradley relative to claims of John Sniffin, sub-contractor, against Gilbert Cameron, contractor for the Smithsonian building.

On motion of Mr. Fitch, the letter was referred to the Building Committee.

The conclusion of the Secretary's annual report was read, containing a report by Professor Baird of the details of the statistics of the museum, of the printing of the publications, and of the exchanges; also an account of the operations relative to meteorology, the statistics of which are given in a report by Professor Foreman.

On motion of Mr. Fitch, it was—

Ordered, That a vote of thanks be presented to Sir Henry Bulwer, for his co-operation in facilitating the transmission of the Smithsonian publications into Great Britain, duty free. The same to be signed by the Chancellor and Secretary.

The Board then adjourned to Saturday, 21st instant.

February 21, 1852.

The Board of Regents met this day at 11 o'clock, a. m.

Present, Mr. Taney, Chancellor; Messrs. Fitch, Lenox, Mason, and Totten, of the Board; and Mr. Seaton, treasurer.

Mr. Mason, to whom was referred the will of the late Thomas Wynn, of Brooklyn, reported that he had written to Mr. J. H. Patten, of New York, relative to the matter, and had received a communication, which he presented to the Board. It furnished a statement of facts relative to the will, with suggestions as to the course to be pursued by the Board with reference to the bequest.

The subject was again referred to Mr. Mason for further investigation.

Mr. Lenox presented a report from the Building Committee on

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the letter of J. H. Bradley, Esq., relative to the unsettled claims of John Sniffin against Gilbert Cameron, contractor, with the accompanying resolution, which was adopted:

Resolved, That the Secretary be authorized to inform Joseph Bradley, Esq., that although the Board of Regents cannot grant the application made in his letter of 10th February last, in behalf of John Sniffin, as in their opinion it would be an interference with the rights of the contractor, G. Cameron, yet that the Board will readily unite in any arrangement between the parties which will facilitate the settlement of the controversy between the said Sniffin and Cameron, not inconsistent with its own rights and duties in the business.

The Secretary stated to the Board that the contract of Mr. Cameron would expire on the 19th of March, and suggested that the Board ought to determine whether the fire-proofing of the centre building should be immediately proceeded with; and also whether it would be advisable to provide a larger lecture-room, and make other changes for the better adaptation and security of the building.

All of which was referred to the Building Committee.

The Board then adjourned to Saturday, 28th inst., at 10 o'clock, a. m.

February 28, 1852.

The Board of Regents met this day, agreeably to adjournment.

A quorum for the transaction of business not being present, the meeting adjourned to Saturday, the 1st of May next.

May 1, 1852.

The Board met this day, at 10 o'clock, a. m.

Present, Mr. Taney, Chancellor; Messrs. Bache, Fitch, Lenox, Meacham, Pearce, Totten, of the Board; and Mr. Seaton, treasurer.

Mr. Lenox, from the Building Committee, to whom was referred the subject of the completion of the building, reported as follows:

That in the opinion of this committee it is advisable to proceed with the completion of the building as far as the funds will allow, and as rapidly as is consistent with good workmanship; and, in accordance with this opinion, they offer the following resolution:

Resolved, That the Building Committee be authorized to contract for the finishing of the building, or so much of it as they may think at present necessary; and that they be allowed to make such changes in the interior as they may think best suited to the wants of the institution: *Provided*, They report the terms of any contract or contracts they may make, and the character of the changes which they may contemplate in the interior of the building, to the Board of Regents, before operations are commenced under their contract.

Mr. Bache, from the Executive Committee, presented the following resolution:

Resolved, That during the year 1852, the sum of thirty thousand dollars out of the Smithsonian income be, and is hereby, appropriated to be expended under the direc-

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tion of the Secretary, and with the advice of the Executive Committee, to defray the expenses of the institution, and to carry out the several parts of the programme.

Mr. Meacham presented the following resolution; which was adopted:

Resolved, That the Chancellor and Secretary be authorized to make the annual report of the Regents to Congress.

Parts of the third and fourth volume of Smithsonian Contributions, so far as printed, were laid on the table for the examination of the Board; also a printed list of foreign correspondents.

On motion, the thanks of the Board were presented to Dr. Charles G. Page for donations of apparatus.

The Secretary laid before the Board the memorial of Josiah Holbrook, requesting the publication of tracts by himself on agricultural geology and chemistry for general distribution. Referred to the Secretary and Executive Committee. Also, a petition from Miss Gilpin, relative to the establishment of a normal school for female teachers. Referred to the Secretary and Executive Committee.

The Secretary stated that, since the most important part of the operations of the institution was transacted by letters, it became highly important that all correspondence, however trifling it might appear, should be carefully preserved, and in order to enforce this upon himself and upon all the assistants, he requested a specific resolution of the Board with reference to it.

Whereupon, on motion of Mr. Totten, it was—

Resolved, That all correspondence relative to the business of the institution be carefully preserved in bound volumes, and that all such correspondence be open at the call of the Regents or of the Executive Committee through the Secretary.

The Secretary brought before the Board the subject of copyright books. He stated that the system adopted was defective, that according to the present arrangement, while all the most worthless publications were sent and the institution put to the expense of furnishing certificates for those, many of the best works published in the country were not deposited. He further stated, that Professor Jewett had proposed a plan for remedying the evil, to which he would ask the attention of the Board.

On motion of Mr. Pearce, it was—

Resolved, That the subject of depositing copyright books in the Smithsonian Institution be referred to the committee formerly appointed on that subject.

On motion of Mr. Fitch, Mr. Meacham was appointed, in place of Hon. Jefferson Davis, on the committee relative to copyright books.

The Secretary brought before the Board the subject of additional compensation to Dr. J. G. Flügel, of Leipsic. He stated that this

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gentleman had acted as the agent of the institution for all the libraries and learned institutions of central and northern Europe, and that about two hundred letters and copies of letters had been received from him.

On motion of Mr. Pearce, it was—

Resolved, That one hundred and fifty dollars be added to the sum allowed to Dr. Flügel for the present year.

The Secretary placed before the Board a letter from Lieutenant Colonel Edward Sabine, R. A., of the Royal Society of London, of which the following is a copy:

ROYAL SOCIETY'S APARTMENTS,
SOMERSET HOUSE, LONDON, *March* 19, 1852.

MY DEAR SIR: I duly communicated to the Earl of Rosse, President of the Royal Society, your letter to me on the subject of the interchange of scientific publications between the United States and this country, and the admission into England, duty free, of scientific books and memoirs presented to institutions or to individuals here, either by or through the Smithsonian Institution. I accompanied this communication by a letter addressed to the president, which you will read in the enclosed printed minutes of the council of the Royal Society of January 15, 1852. The subject has since been brought by the Earl of Rosse under the consideration of her Majesty's government, who have shown, as might be expected, much readiness to meet, in the same spirit, the liberal example which has been set by the United States, in exempting from duty scientific books sent as presents from this country to the Smithsonian Institution, and through that institution to other institutions, and to individuals, cultivating science in the United States. The mode which has been suggested by our Board of Customs, for admitting duty free scientific publications designed for this country, and which, we hope, will receive the approval of the treasury, is, that a list should be furnished by the Royal Society of the names of all institutions and individuals to whom such works may be expected to be addressed, when the custom-house officers will have directions to pass without duty all such publications having the names of such institutions or persons inscribed either on the cover or on the title page, which are sent to this country in packages directed to the Royal Society—the list to be amended or extended from time to time. The Royal Society will gladly take charge of and distribute under these regulations the books which the Smithsonian Institution may send for institutions and individuals in this country, receiving them from the agent in London appointed by the Smithsonian Institution; and I shall be obliged by your furnishing me, at your earliest convenience, with a list, as complete as you may be able to make it, of the names of the institutions and persons to whom books or memoirs are likely to be sent.

The Royal Society will also gladly receive and forward to their ultimate destination (where such assistance may be useful) packages containing publications of a similar description, designed for institutions and individuals on the continent of Europe; such packages being directed to the Royal Society, and stated on the outside of the case or package to be *from the Smithsonian Institution*. The customs' duties will, in such cases, be either altogether remitted or returned on re-exportation.

If it be a convenience to the cultivators of science in the United States, that publications presented to them by institutions or individuals on the continent of Europe, or elsewhere, should be addressed to the Royal Society as a channel of communication, the same facilities will be given by the Board of Customs, and the Royal Society will, with pleasure, make the required arrangements. It will be necessary, in such cases, that packages arriving from the continent of Europe or elsewhere should be marked on the outside, "*for the Smithsonian Institution*," and the foreign Secretary of the Royal Society should be apprised of their being sent. Expenses of freight would of course be defrayed by the agent of the Smithsonian Institution.

I remain, my dear sir, with great respect and regard, very sincerely yours,

EDWARD SABINE,
Vice-President and Treasurer of the Royal Society.

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The Executive Committee presented the following report and resolutions:

The Executive Committee, to whom was referred the subject of inquiring into the expediency of providing buildings for the officers of the institution, report:

That after due reflection they have come to the conclusion that it would conduce very much to the interests of the institution if the officers were provided with houses on the Smithsonian grounds, so that they might be present on all occasions, and be as much as possible at all times identified with the operations of the institution; yet, at present, while the main edifice is unfinished, they do not consider it advisable to incur the expense of additional buildings, and would therefore recommend that in lieu of the rent of a house, five hundred dollars be added to the salaries of Professors Jewett and Baird, to be paid from the beginning of the present year.

The committee has learned with regret that by the construction given by the Secretary to the resolution of the Board of Regents of December 4, 1846, an allowance less than was intended by that resolution has been received by him for house-rent, and offer a resolution to meet the case.

A. D. BACHE,
J. A. PEARCE,
J. G. TOTTEN. } *Executive Committee.*

The following resolutions were accordingly, on motion, adopted:

Resolved, That in the opinion of the Board of Regents, the resolution of December 4, 1846, was intended to make an allowance to the Secretary of five hundred dollars per annum, in lieu of a residence.

Resolved, That in lieu of the rent of a house, there be added to the salaries of Professors Jewett and Baird, each, five hundred dollars per annum, from the beginning of the year to the present time.

The Secretary stated that he wished to be on the safe side, and that he had no intention at present of claiming anything on account of previous house-rent.

The Board then adjourned to Saturday, 22d instant.

March 22, 1852.

The Board met this day, at 11 o'clock, a. m.

Present, Messrs. Bache, Fitch, Lenox, Meacham, Pearce, Totten, of the Board; and Mr. Seaton, treasurer.

In the absence of the Chancellor, on motion, Mr. Pearce took the chair.

Mr. Lenox, from the Building Committee, informed the Board that the work on the building by the present contractor was not quite completed, but might be expected to be so in about ten days. He also remarked upon the condition of a suit pending between Cameron and Sniffin, and its bearing upon the action of the Board.

A bill of extra work, by G. Cameron, for flagging, &c., was presented and referred to the Building Committee, to be audited and settled.

The Secretary stated that Mr. Stanley, the artist, had deposited a gallery of Indian portraits in the west wing of the building, which had attracted many visitors.

The Board then adjourned to Saturday, June 5th.

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June 5, 1852.

The Board of Regents was notified to meet this day at 11 o'clock. A quorum not being present, the Board adjourned to August 7, 1852.

August 7, 1852.

The Board of Regents met this evening at 7½ o'clock.

Present, Messrs. Colcock, Fitch, Pearce, and Totten.

Mr. Maury, elected Mayor of Washington, and therefore *ex officio* Regent of the Smithsonian Institution, appeared and took his seat.

In the absence of the Chancellor, Mr. Pearce took the chair.

Mr. Fitch, from the Building Committee, presented to the Board a letter from James Renwick, Jr., architect, informing the committee that the building, so far as it was embraced in the contract of Mr. Cameron, was completed, and recommending that six thousand dollars be advanced to the contractor from the fifteen per cent. kept back, in advance of Mr. Renwick's final certificate; also stating that it would take several days for him to make up his final award.

Mr. Fitch stated to the Board that there was now a suit pending between Mr. Cameron and his sub-contractor; and that though the institution had no interest in this suit, the Regents had been informed that they were a party to the same. The Building Committee, therefore, thought it advisable to refer this subject to the Board.

In order to obtain further information on this point, it was, on motion, resolved, to postpone the consideration until the next meeting.

Mr. Fitch, from the Building Committee, also presented an account from Mr. Renwick, for services from March 1 to June 1, 1852; which the committee did not feel themselves authorized to pay without an order from the Board.

Mr. Fitch also presented, from the same committee, a communication from Mr. Renwick to the Board, relative to his compensation, including another account for services to August 1, 1852.

Mr. Fitch presented a resolution, relative to the payment of the accounts of Mr. Renwick, the consideration of which was postponed to the next meeting.

The Board then adjourned to Monday evening, August 9, at 7½ o'clock.

August 9, 1852.

The Board of Regents met this evening at 7½ o'clock.

Present, Messrs. Colcock, Mason, Maury, Pearce, and Totten, of

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the Board, and Mr. Seaton, treasurer; and, by invitation, Mr. Lenox, late Mayor of Washington.

In the absence of the Chancellor, Mr. Pearce took the chair.

The proposition to advance Mr. Cameron six thousand dollars from the fifteen per cent. retained by the Board, was brought up for consideration, and after a full discussion of the same, the following resolution, offered by Mr. Mason, was adopted:

Resolved, That the Building Committee be requested to settle the accounts of Mr. Cameron, pursuant to his contract, and that any balance that may be found due be paid him, unless, in the discretion of the committee, under advice of counsel, it may be deemed prudent by them to pay the money into court, in the pending suit to which the institution is a party, or to withhold it until further order of the Board.

The resolution offered by Mr. Fitch, at the last meeting, relative to the accounts of Mr. Renwick, was taken up; and after being modified by General Totten, was adopted, as follows:

Resolved, That Mr. Renwick, having reported by letter to the Building Committee that the Smithsonian building is completed, be notified that his services as architect are no longer required by the Regents of this institution, and that the bills he has presented for his services up to the first of August, 1852, will be paid as soon as he shall have rendered to the Regents his final certificate of the completion of the building, according to the terms of the contract with Dixon and Cameron, as modified on the 3d July, 1850; and if the building be not completed, the said bills shall be paid upon the rendition of his certificate, showing the extent to which it is completed, and the particulars in which it is unfinished; together with any plans of the building, or papers, belonging to the institution, which may be in his possession.

Resolved, That the Secretary be authorized to pay said bills, in accordance with the foregoing resolution.

The Secretary stated that the expiration of the term of service of Mr. Lenox, as a Regent, has caused a vacancy in the Building Committee.

The chair nominated Mr. Maury to fill the vacancy; and, on motion, the nomination was confirmed.

The following resolutions, offered by Mr. Totten, were adopted:

Resolved, That the Board of Regents of the Smithsonian Institution have heard, with deep regret, of the death of Mr. Andrew J. Downing, late superintendent of the grounds of the institution.

Resolved, That we entertain a grateful sense of the value of Mr. Downing's services in the department to which he devoted his life; and while we bow with submission to this mysterious dispensation of Providence, we feel that his decease is an irreparable loss to this institution, to the city of Washington, and in general a public calamity.

Resolved, That we tender to the family of the deceased the expression of our sincere sympathy in this time of their affliction.

Resolved, That the Secretary be requested to send a copy of these resolutions to the family of the deceased.

The Board then adjourned *sine die*.

January 5, 1853.

In accordance with a resolution of the Board of Regents of the Smithsonian Institution, fixing the time of the beginning of their annual meeting on the first Wednesday of January of each year,

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the Board met this day in the Regents' room, over the south entrance of the main building.

Present, Messrs. Mason, Maury, Meacham, Rush, and Totten, of the Board; and Mr. Seaton, treasurer of the institution. Mr. Charlton, the new member appointed from the Senate of the United States, was present and took his seat with the Board.

In the absence of the Chancellor, Mr. Rush was called to the chair.

The Secretary informed the Board that there were two vacancies in the list of Regents, and that the Senate had passed a resolution to fill these, which was now before the House of Representatives for concurrence. Also, that there was a vacancy in the Executive Committee, which prevents the drawing of the semi-annual interest from the treasury and the settlement of the accounts of the past year.

On motion of Mr. Mason—

Resolved, That the vacancy in the Executive Committee be filled by the nomination of the chair.

Whereupon, Mr. Mason was appointed.

The Secretary informed the Board that the accounts and reports relative to the operations of the last year would be ready for presentation at the next meeting.

Whereupon, the Board adjourned to Saturday, the 15th instant, at 10 o'clock, a. m.

January 15, 1853.

The Board of Regents met this day at 10 o'clock, in the Regents' room.

A quorum not being present, the meeting adjourned to 22d inst., at 11 o'clock, a. m.

January 22, 1853.

The Board of Regents met this day at 11 o'clock, a. m.

Present, Messrs. Charlton, Colcock, Maury, Meacham, Pearce, Rush, Totten; Mr. Seaton, treasurer; and Washington Irving, honorary member.

In the absence of the Chancellor, and on motion of Mr. Rush, Mr. Pearce took the chair.

The proceedings of the previous meeting were read and approved.

The Building Committee submitted their report; which was read and adopted.

The Secretary presented the report and final decision of James

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Renwick, Jr., which was read; and, on motion of General Totten, referred to the Building Committee.

The plans for finishing the interior of the centre building, by Captain B. S. Alexander, Corps of Engineers, United States, were presented and examined.

On motion of General Totten, the following resolutions were adopted:

Resolved, That the plans for finishing the interior of the centre building presented by Captain B. S. Alexander, Corps of Engineers, United States, be adopted by the Board of Regents, reserving the right, in behalf of the Building Committee, of altering the details thereof to such an extent as may seem to them proper as the work proceeds.

Resolved, That Captain Alexander be requested to give to the general supervision of the execution of his plan such time as his public duties will permit, and that he be compensated therefor to such amount as to the Building Committee shall seem just and proper.

The treasurer presented the details of the expenditures; which was, on motion, referred to the Executive Committee.

The Secretary presented his report of the operations of the institution for the past year; which was, in part, read.

The Board then adjourned to Friday evening next, 28th instant, at 7½ o'clock.

January 28, 1853.

The Board of Regents met this evening at 8 o'clock, in the Regents' room.

Present, Messrs. Bache, Charlton, Colcock, Mason, Meacham, and Totten, of the Board; and Washington Irving, honorary member.

In the absence of the Chancellor, and on motion of Mr. Rush, Mr. Mason took the chair.

The Secretary announced to the Board that Professor A. D. Bache, of Washington, had been re-elected, by a joint resolution of the two Houses of Congress, a Regent for six years; and also that the Hon. John Macpherson Berrien, of Georgia, had been elected a Regent for the same term. Mr. Bache being present, took his seat in the Board.

The proceedings of the last meeting were read and approved.

The Secretary made a statement relative to the expedition under the direction of Dr. E. K. Kane, United States Navy, and his want of instruments for magnetic observations in the Arctic seas, referring at the same time to the expedition to Chili, of Lieutenant Gilliss, United States Navy, to whom a timely and highly useful grant

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had been made by the Board, under similar circumstances, and which had been reimbursed to the institution.

Mr. Rush offered the following resolution; which was adopted:

Resolved, That a sum not exceeding five hundred dollars be, and the same is hereby, appropriated for the purchase of philosophical instruments to be used in the new expedition in search of Sir John Franklin in the Arctic seas, and which are to be committed to the charge of Dr. E. K. Kane, of that expedition.

The Secretary presented the application of the Rev. Mr. Dennison for the use of the lecture room for holding religious service therein; which was referred to the Secretary.

The Secretary presented the case of Stanley's gallery of Indian portraits, for which, if they should be purchased by the Government, the use of the gallery of art was considered necessary as a temporary place of deposit; also referred to the Secretary.

The reading of the annual report was then continued, including the report of Prof. Baird, Assistant Secretary, relative to exchanges.

Mr. Mason expressed a desire to resign his place as member of the Executive Committee, which he had accepted with a view to the reappointment of Mr. Bache as Regent, and his subsequent reelection as a member of the Executive Committee.

The resignation of Mr. Mason was accepted, and Mr. Bache reelected.

A letter was presented from Gilbert Cameron, requesting, on account of his reputation, to be allowed to finish the centre building, and claiming this privilege as a right under his general contract; referred to the Building Committee.

The Board then adjourned to Thursday evening, February 3, at 6½ o'clock.

February 3, 1853.

The Board of Regents met this evening at 8 o'clock.

Present, Messrs. Bache, Charlton, Colcock, Mason, Maury, Meacham, and Totten, of the Board, and Washington Irving, honorary member.

Mr. Mason took the chair.

The proceedings of the previous meeting were read and approved.

The Building Committee, to which was referred the letter of Mr. Cameron relative to his right to the contract for finishing the centre building, reported progress, and presented a communication from Mr. James M. Carlisle upon this subject; which was then referred back to the committee.

The Secretary presented a plan of a building for a magnetic observatory near the institution; stating, also, that instruments of

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the best construction, now in the possession of the superintendent of the United States Coast Survey, would be furnished.

Mr. Colcock offered the following resolution; which was adopted:

Resolved, That a magnetic observatory be erected, under the supervision of the Building Committee, at such place on the grounds of the institution as they may select, and according to a plan to be approved by them, and that the sum of eleven hundred dollars is hereby appropriated therefor.

A communication from Captain Lefroy, R. A., was presented and read, relative to the discontinuance of the magnetic observatory of Toronto, Canada West; referred to the Executive Committee and the Secretary, who were requested to memorialize the British Government on the subject.

The correspondence between the Secretary and Mrs. A. J. Downing, upon the transmission of the resolutions of the Board upon receiving information of the death of Mr. Downing, was read.

The Secretary also informed the Board of the recent death of Sears C. Walker, Esq., and of Prof. C. B. Adams, of Amherst College, Massachusetts; whereupon the following resolutions, offered by Mr. Bache, were adopted:

Resolved, That the Regents of the Smithsonian Institution have heard with deep regret the announcement of the death of Sears C. Walker, Esq., whose communications in the Smithsonian Transactions on the planet Neptune have attracted the notice and won the approval and admiration of astronomers throughout the world.

Resolved, That the Regents offer to the family of Mr. Walker their condolence on the loss which they have sustained.

Resolved, That the Regents of the Smithsonian Institution have heard with regret of the decease of their valued correspondent, Prof. C. B. Adams, which occurred at St. Thomas, while he was engaged in making collections in natural history, to which science he was devoted; and offer to his family their condolence on the loss which they have sustained.

The Board then adjourned to meet on Saturday, the 12th instant, at 10 o'clock, a. m.

February 12, 1853.

The Board of Regents met this day at 10 o'clock, a. m.

Present, Messrs. Bache, Fitch, Maury, Meacham, and Pearce, of the Board, and Washington Irving, honorary member.

On motion, Mr. Pearce took the chair.

The proceedings of the previous meeting were read and approved.

Mr. Bache, in behalf of the Executive Committee, presented a letter to be forwarded to the British Home and Colonial Governments, to urge the continuance of the Toronto observatory.

The Secretary presented to the consideration of the Board the necessity of making provision for the investment of the surplus fund in the event of the petition now before Congress relative to it not being acted on.

The chair stated it to be the opinion of Mr. Corcoran, who had

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been present, that the State stocks of North Carolina would be a suitable and safe means of investment; referred to the Executive Committee.

The Secretary presented for the examination of the Board a manuscript memoir, by I. A. Lapham, relative to the mounds of Wisconsin, received from the American Antiquarian Society of Worcester, and mentioned in the sixth annual report.

The Secretary presented the case of the late Prof. C. B. Adams, whose draft for one hundred and fifty dollars had been honored by the institution. A letter from Thomas Bland, Esq., on the part of the family of Prof. Adams, was read, offering to refund the money or send to the institution a portion of the collections in natural history made by Prof. Adams in his last expedition.

The subject was referred to the Secretary, with the understanding that the collections be accepted, and that the repayment of the money be not required from the executors of Prof. Adams.

The Secretary presented the subject of the compensation of Dr. J. G. Flügel, of Leipsic, the agent for Smithsonian exchanges in Central Europe.

The following resolution, offered by Mr. Bache, was adopted:

Resolved, That the compensation of Dr. J. G. Flügel, agent at Leipsic, for the reception and distribution of publications on the part of the Smithsonian Institution for Central Europe, be three hundred dollars per annum until otherwise ordered by the Board.

The reading of the Secretary's report was continued, including an account of the operations in meteorology during the past year; also including the operations relative to the library, under the care of Prof. Jewett.

An extensive collection of MS. bills, inventories, and other accounts of business in private English families, from 1632 to 1750, in fifty-four volumes, presented by Mr. J. O. Halliwell, was laid on the table for examination; and, on motion, the following resolution was adopted:

Resolved, That the Secretary be requested to transmit to Mr. J. O. Halliwell, of London, an expression of the grateful sense entertained by the Board of Regents of the munificent gift received from him, and of the honor done the institution by selecting it as a place of deposit for these interesting documents.

The operations of the stereotyping department were presented by the Secretary, and a statement made of its capability of preparing and printing catalogues of all the libraries in the United States.

On motion, the following preamble and resolution were adopted:

Whereas a plan for stereotyping catalogues by separate titles, and for preparing and printing the catalogues of the various libraries in the United States in uniform style, and at greatly diminished cost, as well as for forming a general catalogue of all these libraries, was presented to the Smithsonian Institution and referred to two com-

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missions—one to report upon the literary advantages of the plan, and the other upon the practicability of the means proposed for its execution:

And whereas, on the recommendation of these commissions, the Smithsonian Institution has incurred the expense of procuring type and apparatus, of educating workmen, and of developing and perfecting processes to be employed, so that all arrangements are now made for the successful prosecution of the work:

And whereas the first commission appointed to examine the plan, in their report, recommended that, "in order that a beginning might be made in the execution of the plan under circumstances highly favorable to its success, the undersigned take the liberty of suggesting that it would be advisable for the Regents of the Smithsonian Institution to obtain the requisite authority to prepare a catalogue of the library of Congress on the above described plan:" Therefore—

Resolved, That the Secretary of the Institution be requested to call the attention of the Library Committee of Congress to the above described plan, to inform them that the institution is now ready to execute the proposed work, and to invite their co-operation in aid of an enterprise so important to the library of Congress, to all the libraries in the country, and to the great object of this institution, "the increase and diffusion of knowledge."

Mr. Pearce, as chairman, presented from the Executive Committee their annual report in relation to the finances and expenditures of the institution during the year 1852.

The Board then adjourned to meet at the call of the Secretary.

March 12, 1853.

The Board of Regents met this day at 10 o'clock, a. m.

Present, Messrs. Colcock, Fitch, Mason, Maury, Totten, the Secretary, and W. W. Seaton, treasurer.

The proceedings of the last meeting were read and approved.

The Secretary brought before the Board the subject of the disposition of the surplus fund, and stated that Messrs. Corcoran & Riggs had offered to allow interest at five per cent. if the deposit was continued with them.

Mr. Fitch offered the following resolution; which was adopted:

Resolved, That the surplus fund of $208,000 now on deposit with Corcoran & Riggs, be continued with them for twelve months, on their proposition to pay interest thereon at five per cent; provided, that a part thereof, not exceeding $58,000, may be withdrawn for building expenditures during the year, and that they deposit the same or equivalent securities to those now held therefor, to be approved by the Regents then in Washington, and the Secretary.

Mr. Colcock offered the following resolution; which was adopted:

Resolved, That during the year 1853 the sum of thirty thousand dollars ($30,000) out of the Smithsonian income be, and is hereby, appropriated, to be expended under the direction of the Secretary, and with the advice of the Executive Committee, to defray the expenses of the institution, and to carry out the several parts of the programme.

The Secretary brought before the Board the question of making a new division of the income of the institution, rendered necessary by the increased expenditure contemplated for finishing the centre building to hold the library and collections, and other causes.

Mr. Fitch offered the following resolution; which was adopted:

Resolved, That the subject of the distribution of the income of the institution in the manner contemplated by the original plan of organization, be referred to a Select

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Committee, to consist of Messrs. Pearce, Mason, Rush, Bache, Choate, Totten, and Maury, for a report at the next session of the Board of Regents of such changes, if any, as in their opinion are desirable; and that the same committee be instructed to report fixed regulations relative to the reception of donations, &c.

General Totten offered the following resolution; which was adopted:

Resolved, That the Building Committee, and the Executive Committee jointly, be instructed to take into consideration and decide upon the propriety of making such alterations in the east wing of the Smithsonian building, as to convert it into a suitable dwelling for the Secretary, and that the Building Committee carry into effect the decision of the Joint Committee.

The Board then, on motion, adjourned *sine die*.

January 4, 1854.

In accordance with a resolution of the Board of Regents of the Smithsonian Institution, fixing the time of the beginning of their annual meeting on the first Wednesday of January of each year, the Board met this day in the Regents' room.

Present, Messrs. English, Mason, Maury, Stuart, Totten, and the Secretary.

In the absence of the Chancellor, and on motion of Mr. Maury, Mr. Mason was called to the chair.

The Secretary informed the Board of the reappointment of Mr. Meacham, of Vermont, and the appointment of Hon. William H. English, of Indiana, and Hon. David Stuart, of Michigan, as Regents of the Smithsonian Institution on the part of the House of Representatives of the present Congress.

The Secretary stated that the accounts and reports of the Institution would be ready for presentation at the next meeting; whereupon, the Regents, after examining the building, adjourned to meet on Saturday, 14th January, at 10 o'clock, a. m.

January 14, 1854.

An adjourned meeting of the Board of Regents of the Smithsonian Institution was held in the Smithsonian building on Saturday, January 14th, at 10 o'clock, a. m.

Present, Messrs. Bache, English, Mason, Maury, Meacham, Pearce, Stuart, Taney, Totten, the Secretary, and W. W. Seaton, Esq., treasurer.

The Chancellor, Hon. Roger B. Taney, took the chair.

The proceedings of the last meeting were read and approved.

The Secretary informed the Board that a meeting of the "Establishment" had been called, by order of the President of the United

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States, in May last. The proceedings of the meeting were then read.

Mr. Maury, on the part of the Building Committee, submitted its report; which was read and adopted.

The treasurer, W. W. Seaton, Esq., presented the details of the expenditures during the year 1853; also, a general statement of the finances; which were, on motion, referred to the Executive Committee.

The Secretary called the attention of the Board to the fact that a resolution had been adopted by the House of Representatives appointing a committee of nine to inquire into the expediency of withdrawing the Smithsonian fund from the Treasury of the United States, and investing it in some safe stocks.

On motion of Mr. Mason, the consideration of the subject was postponed until the Secretary should be called upon by the committee of the House for information, and his report was presented to the Board.

The Secretary presented his report of the operations of the institution for the year 1853; which was in part read.

On motion of Mr. Maury, it was—

Resolved, That the vacancy existing in the Building Committee be filled by nomination of the chair.

Whereupon, Mr. William H. English was appointed.

The Board then adjourned, to meet on Saturday, January 28th, at 10 o'clock, a. m.

January 28, 1854.

An adjourned meeting of the Board of Regents was held on Saturday, January 28th, 1854, at 10 o'clock, a. m.

Present, Messrs. Bache, English, Maury, Meacham, Pearce, Stuart, Taney, Totten, of the Board; W. W. Seaton, Esq., treasurer, and the Secretary.

The Chancellor took the chair.

The minutes of the last meeting were read and approved.

The Secretary stated to the Board that Hon. Joseph R. Chandler had offered to present to the House of Representatives the petition of the Board, relative to funding the $150,000 of surplus income in the Treasury of the United States, and to move that it might be referred to the committee which had been appointed by the House, relative to the Smithsonian fund.

Whereupon, on motion of Mr. Pearce, the original memorial of the Board to Congress was referred to the Executive Committee,

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with instructions to make such modifications in the wording of it as in their judgment might be rendered necessary by present circumstances.

A petition was presented from Gilbert Cameron, the contractor of the building, requesting the payment of the money due him, which had been kept back on account of a law-suit between himself and one of the sub-contractors.

In reference to the same, Mr. Maury, on behalf of the Building Committee, presented a letter from J. M. Carlisle, Esq., attorney of the Board, stating that the suit had been dismissed, and that the court had decided that the Board of Regents could not be sued. Mr. Maury also presented, on the part of the Building Committee, a letter from Joseph H. Bradley, Esq., requesting that the money be retained by the Board until the before-mentioned law-suit was finally decided.

On motion of Mr. Pearce, the subject was referred to a committee, with power to order the money to be paid, in whole or in part, if in their judgment it was thought proper.

The chair appointed Messrs. Mason, Meacham, and Totten, as the committee.

The Secretary laid before the Board a bill from Henry Parish for a copy of Canina's work on Architecture, purchased by James Renwick, Jr., for the Institution in 1847, and now in the library, but which, according to an accompanying letter from Mr. Renwick, had never been paid.

On motion of Mr. Meacham, the Secretary was directed to settle the bill, provided on examining accounts, no evidence could be found of its having been paid.

The Building Committee exhibited to the Board the drawings for the new lecture-room.

The Secretary read the continuation of his report relative to the publications, correspondence, magnetism, and meteorology.

A number of letters received since the last meeting, and the answers to them, were read to illustrate the character of the correspondence of the institution.

Mr. Meacham offered the following resolution:

Resolved, That the Secretary and other officers of the Smithsonian Institution be directed to furnish the Board of Regents with estimates of appropriations necessary to be made in order to carry on the Institution the ensuing year, according to the laws for its organization.

After some discussion, the resolution was postponed for further discussion until the next meeting.

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On motion, the Board then adjourned to meet on Saturday, February 11, at 10 o'clock, a. m.

February 11, 1854.

A quorum not being present, the Board adjourned to meet on Saturday, February 18, at 10 o'clock, a. m.

February 18, 1854.

An adjourned meeting of the Board of Regents of the Smithsonian Institution was held on Saturday, February 18, 1854, at 10 o'clock, a. m.

Present, Messrs. Bache, English, Maury, Meacham, Pearce, Taney, of the Board; and the Secretary.

The Chancellor took the chair.

The minutes of the last meeting were read and approved.

A communication was read by the Secretary in reference to the Wynn estate; which, on motion of Mr. Pearce, was referred to Mr. Mason, to whom prior communications on the same subject had been referred.

A memorial was presented from Dr. S. Spooner, of New York, offering to present to the institution the original copper-plates of the Musée Francais and the Musée Royal, on condition that it would publish under his superintendence an edition of these works.

On motion of Mr. Pearce, the Secretary was directed, on the part of the Institution, respectfully to decline the proposition of Dr. Spooner, the Regents not considering themselves authorized to engage in such an enterprise.

The Secretary stated to the Board that Professor Wilson, of the English Commission to the Exhibition of the Industry of all Nations at New York, had presented to the Smithsonian Institution a set of models, casts, and drawings, to be used in teaching the arts of design.

The Secretary proposed to lend these to the Metropolitan Mechanic's Institute, of this city, for the use of its school of design; which proposition was agreed to by the Board.

The Secretary read the correspondence between the Smithsonian Institution and the California Academy of Natural Sciences, in which the latter authorize the former to purchase a full set of meterological and magnetic instruments for the use of the society; the means of defraying the expense of the purchase having been generously provided by its president, Dr. A. Randall.

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A memoir on the "Europo-American Physical Man," was laid before the Regents, which had been submitted to the institution for publication since the last meeting of the Board.

Professor Bache presented a specimen of the photographic register of the motions of the magnetic needle, taken at the magnetic observatory of the Smithsonian Institution.

The Secretary informed the Board that the annual meeting of the United States Agricultural Society would be held on the 22d inst., in the Smithsonian Institution, and read the following extract from the address of the President of that Society:

"Our location at the national capital gives us peculiar facilities for intercommunication and for intercourse with members of Congress, representing all parts of our widely extended country. We may also secure many benefits from the Smithsonian Institution, whose objects are the general increase of knowledge and the promotion of science, objects so analogous to those of this association as to give importance to the question whether reciprocal benefits might not be expected from closer relations. By the courtesy of this institution we have been permitted to occupy their commodious apartments, and an inquiry should be made by our Executive officers, or a special committee, to ascertain what room or rooms can be obtained for the future accommodation of this society. We need a public building, or offices in some existing edifice, for our Corresponding Secretary and Treasurer, for the preservation of our records, and of the agricultural seeds and products which are now in our possession, or may be hereafter required, and also for an agricultural library, museum, and cabinet."

On motion of Mr. Maury, the Secretary was authorized to offer such accommodations and facilities to the United States Agricultural Society as the institution had at its disposal.

The continuation of the Secretary's report relative to the library, museum, and exchanges, was presented, but the reading was postponed till the next meeting.

The resolution offered by Mr. Meacham, at the last meeting of the Board, was then taken up for consideration.

Mr. Pearce moved to amend it by inserting the "Executive Committee and the Secretary," in place of the "Secretary and the other officers of the institution."

On motion of Mr. English, the resolution and amendment were referred to the special committee, which was appointed at the last session on the distribution of the income of the institution, consisting of Messrs. Pearce, Mason, Rush, Bache, Choate, Totten, and Maury.

As Mr. Choate had signified, in a letter to the Secretary, his inability to attend the meetings of this committee, on motion, of Mr. English, his place was filled by the appointment of Mr. Meacham.

The Board then adjourned to meet on Saturday, February 25, at 10 o'clock, a. m.

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February 25, 1854.

An adjourned meeting of the Board of Regents of the Smithsonian Institution was held on Saturday, February 25, 1854, at 10 o'clock, a. m.

Present, Messrs. Douglas, English, Maury, Mason, Meacham, Pearce, Rush, Stuart and the Secretary.

Hon. Stephen A. Douglas, appointed from the Senate of the United States, as a Regent of the Institution, to fill the vacancy occasioned by the expiration of the term of Hon. R. M. Charlton, appeared and took his seat in the Board.

In the absence of the Chancellor, Mr. Pearce was called to the chair.

The minutes of the last meeting were then read and approved.

The Secretary laid before the Board, for inspection, the proof-sheets and illustrations of a memoir, by John Chappelsmith, on the tornado which occurred near New Harmony, Indiana, in 1852.

The Secretary stated that, in accordance with the resolution of the Board at its last meeting, the use of the lecture room of the institution had been given to the United States Agricultural Society, which had held its sessions there during the past week.

The continuation of the report of the Secretary was read.

The Board then adjourned to meet on Saturday, March 4, 1854.

March 4, 1854.

A quorum not being present, the Board adjourned to meet on Saturday March 11, 1854, at 10 o'clock, a. m.

March 11, 1854.

An adjourned meeting of the Board of Regents was held on Saturday, March 11, 1854, at 10 o'clock, a. m.

Present, Messrs. Bache, English, Maury, Mason, Meacham, Pearce, Totten, and the Secretary.

In the absence of the Chancellor, Mr. Pearce was called to the chair.

The minutes of the last meeting were read and approved.

The report of the Executive Committee in relation to the finances and expenditures of the institution during the year 1853 was presented by the chairman, Mr. Pearce.

On motion of Mr. Mason, the report was accepted.

The committee, to which was referred the resolution of Mr. Fitch, offered at the last session, and also the resolution offered by

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Mr. Meacham, at the meeting of the Board, January 28, 1854, reported the following resolution, and stated that a full report on the general subject would be made hereafter:

Resolved, That the Executive Committee and the Secretary of the Institution be instructed to submit to the Board of Regents, at the commencement of each and every year, an estimate, in detail, of all sums which will be required for the expenses of the current year, as a basis for specific appropriations to be made by the Board.

On motion, the resolution was adopted.

The Secretary stated to the Board that a memorial and resolution, relative to funding $150,000 in the Treasury of the United States, had been submitted by Hon. Joseph R. Chandler to the House of Representatives, and had been referred to the committee previously appointed by the House to consider the expediency of withdrawing the Smithsonian fund from the Treasury of the United States and investing it in some safe stock.

The Special Committee, to which was referred the subject of payment to Gilbert Cameron of the money due him which had been kept back on account of a law-suit between him and one of the sub-contractors, reported that they had "examined the question referred to them, and were of the opinion that the balance due Gilbert Cameron should be paid to him, and direct accordingly."

The Secretary stated that, in accordance with this direction, he had paid Mr. Cameron $10,000, but had reserved a part of the money until the account could be critically examined.

A memorial from the American Philosophical Society to the Congress of the United States, praying "that the President of the United States should be authorized to enter into such correspondence with the Government of Great Britain, as may secure, in a reasonable time, a proper uniformity of coinage, in the mode that may be found most discreet and convenient," was laid before the Board for its co-operation and approval.

On motion of Mr. Mason, the subject was referred to the Executive Committee.

A communication was read from Mr. J. R. Lambdin, President of the American Academy of Fine Arts, Philadelphia, recommending that the Smithsonian Institution should procure moulds from the best and most useful specimens of the collection in the British Museum, known as the Elgin Marbles, and that, from these moulds, casts should be produced and sold at cost to such academies of art, &c., as may desire their possession.

On motion of Mr. Mason, this subject was referred to the Executive Committee.

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The continuation of the report of the Secretary in relation to the museum, exchanges, &c., was read.

The Board then adjourned to meet at the call of the Secretary.

April 29, 1854.

A special meeting of the Board of Regents of the Smithsonian Institution, called by the Secretary, at the request of Messrs. Meacham, English, and Stuart, was held on Saturday, April 29, 1854, at 10 o'clock.

Present, Messrs. Bache, Douglas, Hawley, Maury, Meacham, Pearce, Taney, and the Secretary.

The Chancellor took the chair.

The minutes of the last meeting were read and approved.

Mr. Pearce, in behalf of the Executive Committee, presented the following estimate of the appropriations to be made for the year 1854.

The Executive Committee recommend the following appropriations for the present year from the income of the institution:

For building			$7,000 00
For expenses of the meetings of the Board		$250 00	
For lighting and heating		600 00	
For postage		500 00	
For transportation and exchange		1,600 00	
For stationery		250 00	
For general printing		600 00	
For apparatus		850 00	
For incidentals generally		885 00	
SALARIES GENERAL.			
Secretary	$3,500 00		
Clerk	1,000 00		
Book-keeper	200 00		
Janitor	400 00		
Laborer	250 00		
Watchman	365 00		
Extra clerk hire	300 00		
		6,015 00	
			11,000 00
Smithsonian contributions		6,000 00	
Reports on progress of knowledge		500 00	
Other publications		250 00	
Meteorology		3,000 00	
Computations		100 00	
Lectures		1,000 00	
			10,850 00
LIBRARY.			
Salary of Assistant Secretary	2,500 00		
Salaries of assistants in the library—one at $600, and another at $540	1,140 00		
Purchase of books	1,800 00		
Incidentals	160 00		
Binding	250 00		
Stereotyping	150 00		
		6,000 00	

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MUSEUM.			
Salary of Assistant Secretary	$2,000 00		
Explorations	250 00		
Alcohol, &c	250 00		
Assistance or labor	100 00		
Apparatus	100 00		
Incidentals	100 00		
Catalogue	500 00		
Glass jars	250 00		
		$3,550 00	
			$9,550 00
Contingencies			100 00
			38,500 00

The committee have not recommended an equal distribution between the active operations on the one hand, and the library, museum, &c., on the other, because the compromise resolutions which require such equality of distribution do not go into effect until the completion of the building.

J. A. PEARCE,
A. D. BACHE,
J. G. TOTTEN,
Executive Committee.

On motion of Mr. Pearce, the above report was laid on the table.

The Secretary presented the following letter to the Board, in compliance with which he had called this special meeting:

WASHINGTON, *April* 13, 1854.

Prof. JOSEPH HENRY,
Secretary of the Smithsonian Institution.

In accordance with the provision of the third section of an act establishing the Institution, the undersigned request you to appoint a special meeting of the Regents on Saturday, the 29th instant, at 10 o'clock, a. m.

J. MEACHAM,
W. H. ENGLISH,
D. STUART.

Mr. Meacham then stated the reasons why he had requested this special meeting.

Mr. Pearce stated that the subject brought before the Board by Mr. Meacham was now under consideration by a Special Committee appointed by the Regents, which would be ready to report at the next meeting.

On motion, the subject was postponed till the next meeting of the Board.

The Board then adjourned to meet on Saturday, May 13, at 10 o'clock, a. m.

May 13, 1854.

An adjourned meeting of the Board of Regents was held on Saturday, May 13, at 10 o'clock, a. m.

Present, Messrs. Bache, Hawley, Maury, Meacham, Pearce, Totten, and the Secretary.

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The Chancellor being absent, Mr. Hawley was called to the chair.

The minutes of the last meeting were then read, and after correction, approved.

Letters from Hon. R. B. Taney, Chancellor of the Institution, and from Hon. Richard Rush, stating their inability to attend this meeting of the Board, were read by the Secretary.

Mr. Pearce, chairman of the Special Committee, on the resolutions of Messrs. Fitch and Meacham, stated that it was ready to report, but as it was considered desirable to have a full meeting of the Board, when the subject should be discussed, he moved that the Board adjourn.

The Board then adjourned to meet on Saturday, 20th instant, at 10 o'clock, a. m.

May 20, 1854.

An adjourned meeting of the Board of Regents was held on Saturday, May 20th, at 10 o'clock, a. m.

Present, Messrs. Bache, Choate, Douglas, English, Hawley, Maury, Mason, Meacham, Pearce, Stuart, Totten, and the Secretary.

In the absence of the Chancellor, Mr. Hawley was called to the chair.

The minutes of the last meeting were read and approved.

Mr. Pearce, chairman of the Special Committee* appointed by the Board of Regents of the Smithsonian Institution, to which were referred the resolutions of Hon. Mr. Fitch and Hon. Mr. Meacham, relative to the distribution of the income of the Smithsonian fund, &c., made the following report:

The committee, who were directed to report whether it is desirable to make any changes in the distribution of the income of the institution, in the manner contemplated by the original plan of organization, report as follows:

The distribution and application of the Smithsonian income should be made so as to answer most effectually and beneficially the purposes for which the institution was endowed and established. In making such distribution and application, the Regents should faithfully observe the requirements of the act of Congress establishing the institution, and exercise no discretion but that which the law allows to them.

The purpose of the institution is disclosed in the title of the act, in its preamble, and in its first section. The title is "An act to establish the Smithsonian Institution for the increase and diffusion of knowledge among men." The preamble states the bequest by James Smithson, of all his property to the United States, to found at Washington, under the name of the Smithsonian Institution, "an establishment for the increase and diffusion of knowledge among men." It declares the acceptance of the trust; and "therefore, for the faithful execution of the said trust according to the will of the liberal and enlightened donor," the first section constitutes an establishment by the name of the Smithsonian Institution "for the increase and diffusion of knowledge among men."

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*This committee consisted of the following Regents: Hon. J. A. Pearce, Hon. J. M. Mason, Hon. Richard Rush, Hon. John W. Maury, Gen. J. G. Totten, Prof. A. D. Bache, and the Hon. J. Meacham. The gentleman last named does not concur in this report.

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The fifth section enacts that the Regents shall cause to be erected "a suitable building of sufficient size, and with suitable rooms or halls for the reception and arrangement, upon a liberal scale, of objects of natural history, including a geological and mineralogical cabinet; also, a chemical laboratory, a library, a gallery of art, and the necessary lecture rooms," &c. This section points out certain means and instrumentalities by which the institution is to "execute the trust" "according to the will of the liberal and enlightened donor." But it does not limit the Regents to these means and instrumentalities. A large discretion is elsewhere given to them to employ other means and instrumentalities "for the promotion of the purpose of the testator"—that is, "for the increase and diffusion of knowledge among men."

The eighth section, in its last clause, directs an annual appropriation, from the interest of the funds belonging to the institution, "not exceeding an average of $25,000 annually, for the gradual formation of a library composed of valuable works pertaining to all departments of human knowledge."

And the ninth section enacts that of "any other moneys which have accrued, or shall hereafter accrue, as interest upon the said Smithsonian fund, not herein appropriated, or not required for the purposes herein provided, the said managers (Regents) are hereby authorized to make such disposal as they shall deem best suited for the promotion of the purpose of the testator, anything herein contained to the contrary notwithstanding."

Let us see, now, how far the Regents have complied with these requirements of the law.

They have caused to be erected a building, which is, in the judgment of the Board, suitable, of sufficient size, of plain and durable materials, with suitable rooms for the reception and arrangement, upon a liberal scale, of the objects mentioned in the fifth section of the act. The building, it is true, is not yet completed in all its parts. This has been the result, partly of design, and partly of accident. As the law specified no period, within which the building should be completed, the time of its completion was necessarily within the discretion of the Regents. It was obvious that if they should not hurry its completion, but extend the work upon it through a series of years, they would save a large amount of accruing interest, which, when the building should be finished, might be added to the permanent fund, whereby the means of accomplishing the purposes of the testator would be largely increased. An additional reason for this was, that the structure, thus slowly and cautiously erected, would be more solid and permanent. This policy, therefore, was adopted, and it was determined that the building should be finished in five years. An accident, well known to the Board, and which, in the end must prove to have been fortunate, required a change in the plan of a part of the edifice, and a larger expenditure of money. This cause has further delayed the completion of the building. But during the present year it will be finished on the liberal scale required by the law, and one hundred and fifty thousand dollars of accrued interest will be saved, to be added to the principal.

In the meantime, the Regents have made appropriations of money for the various objects specified in the fifth section of the act, by which and other means they have complied as well with the letter as the spirit of the law. A large and valuable collection of objects of natural history has been made, and, for the most part, classified; a geological and mineralogical cabinet has been provided, and a chemical laboratory has been fitted up, in which researches and experiments have been made. The building contains an apartment intended for a gallery of art; and some works of art, a valuable collection of engravings, have been purchased.

A lecture room has been finished, and for several years lectures have been given, at the expense of the institution, on scientific and literary, abtruse and popular subjects, the admission to which has been free. A library of 12,000 volumes and 8,000 pamphlets and parts of volumes has been acquired by purchase, exchanges, and other means, containing many rare and valuable works pertaining to all branches of knowledge, such as are not to be found in general libraries, and are most highly prized by men of science and research.

This is a very good beginning, according to the plan, for the *gradual* formation of a library, which the act points out.

Of the entire amount expended from the commencement of the institution, a little less than one-eighth has been given to researches and publications. The rest has been applied to the special objects mentioned in the act, and to the general expenses of the institution.

In the act establishing the institution, Congress carefully and wisely forebore to fix the amount of proportion of the annual income which should be appropriated to any of the objects mentioned in the fifth section. They did not even determine or limit the sum which should be expended on the building, nor have they in any manner indi-

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cated that prominence should be given to any particular means or instrumentality for increasing and diffusing knowledge. All this they have left to the discretion of the Regents, to whom they intrusted the conduct of the institution. They have, indeed, declared that annual appropriations should be made for the *gradual* formation of a library, and have provided that such appropriations shall not exceed $25,000 in the average.

This is nothing but a limitation upon the discretion of the Regents, and can by no rule of construction be considered as intimating the desire of Congress that such sum should be *annually* appropriated. The limitation, while it prevented the Regents from exceeding that sum, left them full discretion as to any amount within the limit. The interest on the Smithsonian fund was about $30,000 per annum; and Congress could not but know that an appropriation of five-sixths of that amount per annum would leave a remainder entirely insufficient to defray the salaries and ordinary expenses of an institution, such as was designed by the act, and that nothing would be left for the care of collections, the lectures, and other means of promoting the purpose of the testator. In short, the act points out certain instrumentalities to be employed, in the execution of the trust, created by and for the purposes specified in the will of Smithson, and gives to the managers or Regents authority to dispose of all the income not required for the purposes specified in the act, in such manner as they shall deem best suited for the promotion of the purpose of the testator. As Congress did not determine what portion of the income was to be applied to the purposes specified in the act, it follows that such determination is to be made by those to whom they intrusted the conduct of the business of the institution; and thus the Regents are clearly invested with the power of determining how much of that income is required respectively for library, for museum, for lectures, or for any of the objects specified in the fifth section, and what disposition they will make of so much of the income as they do not think requisite to apply to these objects. So the Regents of 1847, who adopted the plan of organization, understood the law. So they reported to Congress. The Board of Regents, however its members have been changed from time to time, have always so understood it; and Congress, to whom they have annually and faithfully reported their proceedings, have never questioned the propriety of the construction.

In organizing the institution, different opinions indeed were entertained by different members of the Board, as to the most effectual means of promoting the purpose of Smithson. The conflict of opinions resulted in the adoption of certain resolutions, which have been called the "compromise resolutions." These, while they recognize the intention of Congress, and the duty of the Regents, to provide for the accumulation of specimens of art and objects of natural history, and the gradual formation of a library pertaining to all branches of knowledge, &c., also declare it to be expedient, and demanded by the will of Smithson, that, in the plan of organization, the increase of knowledge by original research should form an essential feature; that for this end premiums should be offered for original papers containing positive additions to the sum of human knowledge; and that these and other suitable papers should be published, in transactions of the institution, periodically or occasionally, &c. The seventh of these resolutions is in these words:

"*Resolved*, That for the purpose of carrying into effect the two principal modes of executing the act and trust pointed out in the resolutions herewith submitted, the permanent appropriations out of the accruing interest shall, *so soon as the buildings are completed*, be annually as follows—that is to say:

"*First*. For the formation of a library composed of valuable works pertaining to all departments of useful knowledge, and for the procuring, arranging, and preserving of the various collections of the institution, as well of natural history, and objects of foreign and curious research, and of elegant art, as others, including salaries and all other general expenses connected with the same, excepting those of the first complete arrangement of all such collections and objects as now belong to the United States in the museum of the institution, when completed, together with one-half of the salary of the Secretary, the sum of fifteen thousand dollars.

"*Secondly*. For the preparation and publication of transactions, reports, and all other publications of the institution, including appropriations for original researches and premiums for original papers; for the delivery of all lectures and payment of all lecturers, and for all general expenses connected with said lectures and publications, together with one-half of the salary of the Secretary, the remainder of the annually accruing interest; it being understood that all general and incidental expenses not specially connected with either of the above two great divisions of the plan of the institution shall be equally divided between them."

It will be seen that this division of the income of the institution, between the two

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principal modes of executing the trust, was to be made so soon as "*the buildings were completed*," and not before.

As the building is not completed, this division is not yet obligatory under the compromise resolutions. For some years the annual appropriations for the purposes of the institution were specific, and were applied accordingly. But during the last two years they have been general, and a discretion has been exercised by the Secretary and the Executive Committee, which has resulted in applying to researches, publications, and lectures, an amount somewhat larger than that which has been applied to the library, museum, &c. But this is clearly no violation, as has been charged, of a compromise which is not, by its very terms, to go into effect until the completion of the building.

The committee think it desirable that the appropriations should be specific, and have already so reported to the Board by a resolution submitted on the 11th of March, 1854; and at the last meeting of the Regents the Executive Committee submitted estimates of appropriations in detail for the present year.

Before expressing an opinion on *these resolutions*, the committee deem it their duty at this time to remark upon the plan which was discussed seven years ago, but which is now revived, of devoting the greater part of the income to the accumulation of a great library; thus either abandoning the active operations of research and publications, or so restricting this means of increasing and diffusing knowledge as to deprive it of all sensible value.

It has already been remarked that the language of the eighth section, which directs the gradual formation of a library, is not mandatory as to the amount which shall be thus expended, and that the ninth section authorizes the Regents, after applying so much of the income as may be required for the purposes mentioned in the act, to dispose of the residue of the interest upon the Smithsonian fund in such manner "as they shall deem best suited for the promotion of the purpose of the testator, anything herein contained to the contrary notwithstanding." It is manifest, from what has been said before, that these sections of the law leave to the Regents a large discretion as to the amounts to be applied to the objects specified in the act, and in the choice of other means for promoting the purpose of the testator.

What, then, are the considerations which should govern them in rejecting this plan, which proposes a great library as the best and chief, if not the only, means of executing the trust created by the will of Smithson, and fulfilling their own duty under the law?

The "increase and diffusion of knowledge among men" are the great purposes of this munificent trust. To increase knowledge implies research, or new and active investigation in some one or more of the departments of learning. To diffuse knowledge among men implies active measures for its distribution, so far as may be, among mankind.

Neither of these purposes could be accomplished or materially advanced by the accumulation of a great library at the city of Washington. This would be to gather within the walls of a building here those fruits of learning which had been reaped elsewhere. It would be the *living* of knowledge, not its increase and diffusion. It would be the collection of what philosophical inquirers, men of research, of observation, and of original thought, had ascertained, conceived, or invented, and already published to the world. But it would not of itself add to the sum of human knowledge, it would not increase the stores of learning, but only bring them together. It would develop no new truths, reveal no hidden laws of nature, but only contain the record of what might be already known; so that in no proper sense could it be said to increase knowledge. Neither would it diffuse knowledge, except within a limited sphere. The institution would necessarily be local, for, although it might aid the few men of research residing in Washington, and such students and investigators as occasionally visited the city, it would fail to accomplish the more extensive purpose of the testator and of the law, since it could not be expected to draw hither the great body of such men. These must always be scattered over the country, engaged in pursuits which require their residence elsewhere, and with only occasional opportunities of aiding their inquiries by resort to the library of the Smithsonian Institution. While, therefore, a well-selected library of valuable books pertaining to all departments of learning may well be one of the means employed by the institution, its purpose requires other instrumentalities by which knowledge may be increased and diffused among men. We must never forget that both the will of Smithson and the act of Congress recognize that, as a *nation* is appointed the great dispenser of the fruits of his munificence, so these benefits are to be *universal*, and their recipients to be *men* everywhere and in all time.

If the language of the will had been "to increase and diffuse knowledge among

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the people of the United States," a library would be but a feeble and imperfect instrument as an active agent, even for that limited purpose. The accumulation of books in the political centre of a great country, or even in the centre of population of a numerous people, would no doubt gratify the pride of the nation, and be attended with some profitable results. But such a library would not insure mental activity to inquirers who should live remote from its locality, and its relation to all increase of knowledge would be merely incidental. It would have no effective operation in the thirty-one States which constitute the nation or people of the Union, and instead of being diffusive in its nature, would be centralizing in its influence and passive in its character. Even if the will and the act of Congress were limited by the terms supposed, by no fair construction could the formation of a library be considered as an execution of the trust. But when we consider that the language of the will is not thus limited, and that the benefits of the bequest are intended for *mankind*, we cannot imagine how the establishment of a library could be considered as corresponding to the requisitions of a purpose so wide and liberal. That Smithson did not intend a library to be the prominent feature in the institution contemplated by his bequest, may be inferred from the fact that his will did not mention it, when a single word would have been sufficient for this purpose. And that Congress did not design to indicate a library as the principal object of the establishment which they founded by law to carry out the purpose of Smithson, will be made to appear by an examination of the enactment.

In the construction of a law of Congress, the opinions expressed in the speeches of some of those who voted for it cannot be taken as the opinion of all or even of the major part of them, but the act must be construed according to the general import and evident intention of all its parts.

If we can construe the law from its own provisions, it would be exceedingly unsafe and improper to interpret it by reference to the opinions of a portion only of those who voted for it, being the minor part of them. To do this would be to make the *opinions* of a few control the acts and intentions of the majority as expressed in the law, and in effect to give to those few the law-making power. In the present case the evident intention was to carry out the purpose of Smithson's will, namely: "the increase and diffusion of knowledge among men."

The title of the act, its preamble and provisions, would have been palpably absurd, if their object had been only or chiefly to found a great library. To describe a library as an institution "for the increase and diffusion of knowledge among men," would be a preposterous abuse of terms. So, too, "to erect a suitable building of sufficient size, with suitable rooms or halls for the reception and arrangement, upon a liberal scale, of objects of natural history, geological, mineralogical, and botanical specimens, classed and arranged, so as to facilitate the study of them, with a chemical laboratory, lecture rooms, &c.," as provided in sections five and six, is wholly inconsistent with the idea of an institution of which a library is to be the principal agent.

It is true that the eighth section of the act authorizes an application of an annual sum, not exceeding $25,000, for the gradual formation of a library. This is in great disproportion to the various objects before recited in the act, and if it had been mandatory, would have made the general authority and discretion given to the Regents in the ninth section absurd and nugatory, and would indeed have equally defeated the other provisions before mentioned. Such an appropriation, if made, would establish a great library, but not such an institution as is indicated by the title of the bill, or warranted by its various provisions. Instead of a Secretary with assistants, it should have provided for a librarian, with an assistant as secretary, and assistant librarians. Instead of providing for a building on a liberal scale, with suitable rooms or halls for a chemical laboratory, lecture rooms, &c., not indicating the library as of paramount importance, but, according to the order of enumeration, placing it *after* other objects, the law would have declared it to be of primary importance, and designated the other objects as incidental or subsidiary to the library. The act, in its various terms and provisions, does not seem to have been the result of plans entirely harmonious and consistent, but bears some marks of conflicting opinions; and the large discretion allowed in the ninth section appears to have been intended to give to the Regents the authority to reconcile and determine those difficulties, which Congress could not avoid or provide for, to their own satisfaction.

Nothing, however, seems to be clearer than that the Legislature did not intend a public library to be the principal instrument of the institution. The third section enacts that "the business of the institution shall be conducted at the city of Washington by a Board of Regents." The terms of Smithson's will required that Washington should be the locality of the institution; but if this section had reference to a public library, absorbing almost the whole interest of the fund, would such language have been employed? If a library at Washington was to be established, it was

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wholly unnecessary to provide that the business of the institution should be conducted there, since the business of a library must be conducted where it is placed. The use of this language would seem to imply active transactions and not to refer to books. The application of $25,000 annually (five-sixths of the whole income at the date of the act) to the purchase of books, would be inconsistent with and subversive of the whole tenor of all that precedes the eighth section. Section ninth is singularly comprehensive, and appears to indicate a consciousness, on the part of the framers of the bill, that its provisions might be proved by experience to be incongruous.

For this they provided the true remedy, by investing the Regents with full power to use their judgment in the premises, subject only to the purpose of the will of Smithson, and so much of the law as was mandatory and peremptory, "all other provisions to the contrary notwithstanding."

On the whole, therefore, the committee think that neither the law nor the will of Smithson required the Regents to consider a great library as the paramount object of the institution.

Its purpose requires means of exciting and sustaining research, of stimulating and directing original inquiries, the results of which constitute an increase of knowledge, and the publication of which diffuses it.

Scientific researches are often supposed by the uninformed to be of little or no real importance, and indeed are frequently ridiculed as barren of all practical utility. But nothing is more mistaken than this. The most valuable and productive of the arts of life, the most important and wonder-working inventions of modern times, owe their being and value to scientific investigations. By these have been discovered physical truths and laws, the intelligent application of which to practical inventions has given immense benefits to the world. The germs of these valuable improvements and inventions have been found and developed by scientific research, the original forms of which have often seemed to the many to be as idle and useless as they were curious. A proposition relating to the pendulum, which for many years remained only a curious theoretical relation, ultimately furnished a unit for the standard measures of States and nations. The discovery that a magnetic needle could be moved by a galvanic current, seemed for a long time more curious than useful, and yet it contained the germ of all that was afterwards developed in the telegraph. It has been well remarked that numerous applications and inventions always result from the discovery of a scientific principle; so that there are many Fultons for every Franklin.

There is no branch of industrial art which does not owe, for the most part, its improved processes to such investigations, although the artisans who employ them are often ignorant of their true source. Smithson, who was himself a man of science and research, and a contributor to the Philosophical Transactions of the Royal Society, well knew this. The members of Congress who framed the law were not ignorant of it; and the provisions for a chemical laboratory, and collections of natural history, proved that they looked to the prosecution of such inquiries under the auspices of the Smithsonian Institution.

Wisely, therefore, did the first Board of Regents propose, in order to INCREASE KNOWLEDGE—

First. To stimulate men of talent to make original researches, by offering suitable rewards for memoirs containing new truths, and to publish these and such other papers of suitable character as should be offered to the institution.

Second. To cause particular researches to be made by competent persons.

And in order to DIFFUSE KNOWLEDGE—

First. "To publish occasionally a series of practical reports on the progress of the different branches of knowledge."

Second. "To publish occasionally separate treatises on subjects of general interest."

The results which have been produced by the institution have received the approbation of the learned in every part of the civilized world, and fully justify the wisdom of the plan adopted by the Regents, and successfully carried into operation by the Secretary.

As a proof of this, we need only state the following facts given in the last report of the Regents to Congress:

"The institution has promoted astronomy by the aid furnished the researches which led to the discovery of the true orbit of the new planet, Neptune, and the determination of the perturbations of this planet, and the other bodies of the solar system, on account of their mutual attraction. It has also aided the same branch of

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science, by furnishing instruments and other facilities to the Chilian expedition, under Lieutenant Gillis; and by preparing and publishing an ephemeris of Neptune, which has been adopted by all the astronomers of the world.

"It has advanced geography, by providing the scientific traveler with annual lists of the occultations of the principal stars, by the moon, for the determination of longitude; by the preparation of tables for ascertaining heights with the barometer; and by the collection and publication of important facts relative to the topography of different parts of the country, particularly of the valley of the Mississippi.

"It has established an extended system of meteorology, consisting of a corps of several hundred intelligent observers, who are daily noting the phases of the weather in every part of the continent of North America. It has imported standard instruments, constructed hundreds of compared thermometers, barometers, and psychrometers, and has furnished improved tables and directions for observing with these instruments the various changes of the atmosphere, as to temperature, pressure, moisture, &c. It has collected, and is collecting, from its observers, an extended series of facts which are yielding deductions of great interest in regard to the climate of this country and the meteorology of the globe.

"The institution has advanced the science of geology, by its researches and original publications. It has made a preliminary exploration of the remarkable region on the Upper Missouri river, called the Bad Lands, and is now printing a descriptive memoir on the extraordinary remains which abound in that locality. It has assisted in explorations relative to the distribution in this country of the remains of microscopic animals found in immense quantities in different parts of the United States.

"It has made important contributions to botany, by means of the published results of explorations in Texas, New Mexico, and California; and by the preparation and publication of an extended memoir, illustrated with colored engravings, on the sea-plants of the coast of North America.

"It has published several important original papers on physiology, comparative anatomy, zoology, and different branches of descriptive natural history; and has prepared and printed, for distribution to travelers, a series of directions for collecting and preserving specimens.

"It has advanced terrestrial magnetism, by furnishing instruments for determining the elements of the magnetic force to various exploring expeditions; and by publishing the results of observations made under its direction at the expense of the Government.

"It has collected and published the statistics of the libraries of the United States; and perfected a plan of stereotyping catalogues, which will render effective, as a combined whole, all the scattered libraries of the country.

"The institution has also been instrumental in directing attention to American antiquities, and has awakened such an interest in the subject as will tend to the collection and study of all the facts which can be gathered relative to the ancient inhabitants of this continent. It has also rendered available, for the purposes of the ethnologist and philanthropist, the labors of our missionaries among the Dakotas, by publishing a volume on the language of this tribe of Indians; and has done good service to comparative philology by the distribution of directions for collecting Indian vocabularies.

"It has established an extended system of literary and scientific exchanges, both foreign and domestic, and annually transmits, between the most distant societies and individuals, hundreds of packages of valuable works. It has presented its own publications, free of expense, to all the first-class libraries of the world, and thus rendered them accessible, as far as possible, to all persons who are interested in their study. No restriction of copyright has been placed on their republication; and the truths which they contain are daily finding their way to the general public, through the labors of popular writers and teachers. The distribution of its publications and its system of exchanges has served not only to advance and diffuse knowledge, but also to increase the reputation, and consequently the influence, of our country; to promote a kindly and sympathetic feeling between the New World and the Old—alike grateful to the philosopher and the philanthropist.

"These are the fruits of what is called the system of active operations of the institution, and its power to produce other and continuous results is only limited by the amount of the income which can be appropriated to it, since each succeeding year has presented new and important fields for its cultivation. All the anticipations indulged with regard to it have been fully realized; and, after an experience of six years, there can now be no doubt of the true policy of the Regents in regard to it."

Reports of a more popular character have been published, or are in preparation,

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which are well calculated to diffuse knowledge. Such is the report on the recent improvements in the chemical arts, by Messrs. Booth & Morfit, prepared and published under the direction of the institution. The Secretary has said of it, "that though chiefly intended to benefit the practical man, yet it will be found interesting to the general reader, as exhibiting the cotemporaneous advance of science and art, and the dependence of the latter upon the former for the improvement of its most important processes." Among the subjects of which it treats, may be mentioned fuel and furnaces, glass-making and pottery, cements, metals and their manufacture, chemicals, textile fabrics, mineral and organic manures. This work has been stereotyped, and besides those which are distributed on the plan of exchange, copies are offered for sale at the mere cost of printing, paper, and commission. Another report which is in preparation, on the forest trees of North America, giving their economical and ornamental uses and values, their history, mode of propagation, &c., &c., will supply to agriculturists a work of great interest and importance which has long been a desideratum. Other reports have been prepared, and will be ready for the press as soon as the funds can be appropriated for printing them.

The committee need not repeat in detail all the parts of the plan of organization, but may mention that it included the exchange of the published transactions of the institution, with those of literary and scientific societies and establishments, and provided for a museum and library, to consist of a complete collection of the transactions and proceedings of all the learned societies in the world, of the more important current periodical publications and of other works necessary to scientific investigations; thus employing the instrumentalities pointed out in the law, as means of increasing and diffusing knowledge, entirely consistent with, and necessary to, the plan of research and publication.

This plan is no longer experimental; it has been tested by experience; its success is acknowledged by all who are capable of forming a correct estimate of its results; and the institution has every encouragement to pursue steadily its system of stimulating, assisting, and publishing research.

Whether the equal division of the income of the institution, according to the plan of the compromise resolutions, should be observed after the completion of the building, is a question submitted to your committee for report, and proper to be decided by the Board during the present year. The committee think that while moderate appropriations should be annually made for the gradual increase of the library, and for other objects specified in the fifth section of the act establishing the institution, so as to carry out in good faith the intention of Congress, it is not advisable to make the equal division of the income as proposed by the compromise resolutions.

The public generally, and even the Regents most probably, do not know how small the funds of the institution are in proportion to what is required of it, and the expense necessarily connected with so large a building.

The Secretary has stated in his report that the general expenses—viz: meetings of the Regents and committees, lighting and heating of the building, postage, transportation, stationery, general printing, apparatus, incidentals, and general salaries—have gradually increased, and will grow larger when the building shall be completed and entirely occupied. Last year these expenses amounted to $12,000. Besides this, the salaries of the assistants and pay of attendants in the library and museum are $5,740 per annum.

The salaries are as follows:

General Salaries.

That of the Secretary (per annum)			$3,500
Clerk			1,000
Book-keeper			200
Janitor			400
Laborer			250
Watchman			365
			5,715
Salary of assistant in charge of the library	$2,500		
An assistant to the assistant in the library	600		
Another assistant	540		
		$3,640	
Salary of assistant in charge of the museum		2,000	
Assistance and labor in museum		100	
			5,740
Total of permanent salaries at the present time			11,455

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Together, the salaries and general expenses before mentioned amount to more than half the interest of the original fund, and to nearly half of the interest on that fund, augmented by $150,000 of accumulated interest, which the Regents propose to add to it, so as to make the permanent fund $665,000. The whole or the greater part of the interest on this addition to the original fund will be required during the present year for the building, and when that shall be finished, a considerable sum will be necessary to fit up and furnish the great central portion, which is to be chiefly occupied by the library and museum. It may be assumed that not less than $15,000 will be demanded for this purpose. But supposing the building to be completed and furnished, and the whole income at command for the operations of the institution, and assuming that the salaries and general expenses will not increase, but remain as they were last year, at $17,740, there will be at the disposal of the Regents, for all operations and purposes, including lectures, researches, publications, purchase of books for the library, binding, explorations for the benefit of the museum, apparatus, and the purchase of objects of art, a sum between $22,000 and $23,000. It will readily be perceived how inadequate this sum is to the rapid accumulation of a library, of collections for the museum and gallery of art, for lectures and those active operations which lead directly to the increase and diffusion of knowledge. Even this fund may be expected to be diminished by the greater expense which will attend the occupation of the entire building and the increased and constantly increasing collections.

The museum increases so rapidly by the deposit of Government collections, by donations, exchanges, and the receipt of specimens from special explorations aided by the institution, that very small, if any, annual appropriations are required for it. But the expense of the care and exhibition of an increasing collection swells from year to year, while the Smithsonian funds are not so increased. The great object of the museum should be to furnish to men of science, eminent in their several departments, the means of advancing knowledge in these departments, by submitting specimens of new objects to their examination. If the expenditure could be borne, it would scarcely be desirable to increase the number of officers connected with the museum, so that the various branches of natural history might be fully represented; but considering the limited funds of the Smithsonian Institution, such an idea is not to be entertained.

On the contrary, the collections made should, in general, at all events, be referred for examination and description to the men most eminent in the country, and the results should be published in a manner worthy of their labors by the institution.

A larger but still a moderate appropriation for the library, varying as circumstances may require, should be annually made. It may be desirable, occasionally, to make larger investments in books, as when a library of special value and peculiar suitableness may be in the market, and within the means of the institution. But this should be left to the discretion and sound judgment of the Regents at the time.

It is not believed to be advisable to accumulate in the Smithsonian Institution great masses of books, without reference to their peculiar character and value. What we want, and what the act of Congress contemplates, is not a collection of everything which learned dullness and literary folly as well as real wisdom and sound science have put into print—a vast and unwieldly repertory, in which the trash as well as the precious may be found—but a library of *valuable* books pertaining to all departments of human knowledge. The exchanges will gradually furnish us with much that answers to this description, and moderate appropriations will supply, quite as rapidly as necessary, whatever besides may be requisite to constitute a valuable library of research in all departments of human knowledge. The library now consists of 12,005 volumes, besides 8,095 pamphlets and parts of volumes, and 1,874 maps, and 1,431 engravings.

In his report to the Secretary, of January, 1853, Professor Jewett stated that the library had nearly doubled in size during the year 1852, and that its greatest increase had been by exchanges. He said "they may be considered as the first fruits of a system of scientific and literary exchange established and sustained by the institution. They show, also, that the benefits derivable from its connection with the system of active operations had not been over-estimated.

"A considerable portion of the money expended in publications, returns in the shape of books for the library. These again are constantly increasing the efficiency and interest of the publications. The value of the books received by exchange cannot be estimated by their number, or even their nominal price.

"They are works of the first importance to the scientific student and which it is very difficult to procure by purchase, even with large funds at command."

Professor Baird estimated the value of the works thus received, during the year 1852, at from $4,000 to $5,000. If we estimate the future receipts from the system of

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exchange at half that sum annually, and suppose an appropriation in money of equal amount for the purchase of books, the growth of the library will be quite as rapid as was that of the library of Congress during the twenty-five years prior to the late fire, and its annual increase in value more than double that of the Congressional Library before the period mentioned. For several years before 1825, the ordinary appropriations of Congress for their library were not more than $2,000 per annum. Since that period they have been $5,000.

The Committee of Organization, in their report submitted in 1847, recommended such a selection of books as would "make the Smithsonian Library chiefly a supplemental one," and "to purchase for the most part valuable works which are not to be found elsewhere in the Union."

Of course, this was not to be a universal rule, and not to exclude standard works of authority and reference. They particularly desired to see the library so supplied with important works on bibliography, so that it might become the centre of literary and bibliographical reference for the whole country. This desire has always been entertained by the Regents, and much has already been done towards this object. The collection of printed and manuscript catalogues has already been commenced with this view, and should be steadily followed up. It is believed that the appropriations suggested, together with the exchanges and occasional special appropriations, will, in a reasonable time, not only secure this object, but make the library the most important collection of valuable books, pertaining to all departments of knowledge, to be found in our country.

Suggestions have been made to the committee of certain alterations, in the organization of the institution, which your committee think not warranted by the letter and spirit of the law, and in conflict with the seventh section, which defines the duties and powers of the Secretary. That section admits of only one interpretation. Its terms are direct and explicit, and its objects are expressly and pointedly set forth. The entire property of the institution is placed by it in the Secretary's hands, and he is distinctly constituted the responsible agent of the Board of Regents. He is "to make a fair and accurate record of all their proceedings, to take charge of the building and property of the institution," to discharge the duties of librarian and keeper of the museum. This language clearly shows the intention of the framers of the law to secure unity of action, to admit of no separate and independent departments, as is often the case in other institutions. All the duties enumerated are devolved solely on the Secretary, and though other persons may be employed, they are merely *his* assistants, the offices being emphatically one. The Secretary alone is authorized to act; and if the business of the institution demanded no more than the mind and labor of one man might be competent to perform, there would be no occasion for the employment of anyone else.

The law is declaratory and positive in charging the Secretary with the enumerated duties, and therefore invests him, and him alone, with the corresponding powers. But as it must have been manifest that no Secretary could be able of himself to perform personally everything required for the discharge of his enumerated duties, provision is made for aid to him, in the clause which says that he "may, with the consent of the Board, employ assistants," &c.

The positions of the persons so employed are determined by the word which designates them in the clause authorizing their employment. They are called "*assistants*." To whom? Not to the Regents, but to the Secretary. Their position is necessarily subordinate and as their duties are those of assistants to their principal, they can no more be independent of him than they can be superior to him. This construction is so manifestly proper, that it would seem to require no argument to justify it. But if anything further were wanted, it may be found in the fact that the *Secretary* is to employ them in and about that very business with which *he* is charged and for which *he* alone is responsible. The character of this part of the section is permissive. He is not *required* to employ any one, but is permitted to employ persons to assist him, provided he satisfy the Board that their services are necessary as aids to him.

In another part of the same section provision is made for the payment, and if need be the removal, of the Secretary and his assistants, and in this connection they are spoken of as officers; but by no ingenuity of construction can that word, in this connection, be held to assign them special duties or confer any separate authority.

Thus careful has Congress been to provide an efficient system of operations which can only come from harmony of purpose and unity of action.

This view of the intention of Congress, so clearly expressed in the law, would be directly contradicted by the plan which has been suggested, of organizing the institution definitely into several departments, placing at the head of these departments different assistants, establishing their relative positions, prescribing distinct duties for

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them, assigning certain shares of the income to be disbursed by them, and stating their authority, privileges, and remedies for infringement of their official rights, or of the interests intrusted to their care. All this would tend not to secure a loyal and harmonious co-operation, to a common end, of the assistants with the Secretary, but to encourage rivalry, to invite collision, to engender hostility, to destroy subordination, to distract the operations of the institution, to impair its efficiency, and to destroy its usefulness.

The committee are satisfied, too, that the expenditures of the institution would be unprofitably increased by organizing it into several departments, with authority to the head of each department to expend the money appropriated to it. The tendency would be to more subdivisions of duty, to an increase of assistants, by the introduction first of temporary and then of permanent employés, until, as the collections grew larger and the persons charged with their care became more numerous, the greater portion of the income would be absorbed in salaries. Thus the munificence intended to increase and diffuse knowledge among mankind would be chiefly expended in salaries and official emoluments.

Already the committee think it would be well to consider whether it might not be consistent with the proper working of the institution to limit and reduce some of these expenses.

While the committee desire to preserve and increase the library and museum, as already stated, they think it would be well to repeal the seventh resolution, passed by the Board of Regents on the 26th January, 1847, which has already been recited.

They recommend that in the future the appropriations should be made without reference to any fixed rule of distribution or division between the different operations and objects of the institution, and that the Board, while making specific appropriations, should apportion them according to their opinion of what is necessary and proper, giving to each object such sum as its intrinsic importance and a compliance in good faith with the law may seem to demand.

Thus they will be enabled to economize by postponing or limiting some operations and preferring others, by applying the funds to those objects which at the time appear most pressing, and which promise the most prompt, far-reaching, and beneficial action.

In conclusion, the committee adopt the following remarks and recommendations, which they extract from a paper submitted to them by the Secretary, and desire that they may be considered as part of this report:

"If one-fourth of the whole income is devoted to the museum, additional assistants will be required for the care and management of the specimens, while the withdrawal of Professor Baird from the publications and exchanges will require more help in that quarter.

"Besides the necessary expenditure for cases and furniture for the library, appropriations may be made for carrying on the catalogue system; for printing reports on libraries; for the publication of a library manual; for the preparation and publication of bibliographies; for completing sets of transactions, and the purchase of other books for the operations of the institution; also, for printing a catalogue or list of books in the library.

"In addition to the sum which will be necessarily required for the cases and furniture of the museum, a small sum may annually be appropriated for collecting particular desiderata in natural history, to be presented to other institutions as well as preserved in this; for purchasing instruments and models to illustrate particular branches of knowledge, or to assist in the prosecution of special lines of research, which may serve as samples to artisans in this country, or be used in investigations.

"Models may also be obtained for multiplying casts of the most celebrated specimens of ancient and modern art.

"Appropriations for all these objects cannot be made in the same year, but discretion, as I have said before, should be used as to the time when it would be the most advisable to make the expenditure in each particular case.

"As few operations as possible ought to be carried on in the building of the institution. Printing, stereotyping, engraving, &c., can be done at a cheaper rate by contract; these require expensive superintendence; and workmen, as a general rule, cannot be expected to do as much for public institutions as for a private individual. Besides this, much time must be lost in the interval of the publication of the different articles; and when it is necessary, on account of the exhaustion of the appropriation, to stop for the year, this can only be done by disbanding the workmen, while the interest on the cost of the apparatus remains.

"These remarks also apply to calculations and reductions of observations, which,

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in many cases can be distributed to professors in colleges, who, for a small addition to their salaries, will furnish results which could not be procured in the institution for many times the same sum.

"The maxim stated in the programme, namely, that few individuals ought to be permanently supported by the institution, should be constantly kept in view, and the greatest caution exercised in adding new members to the permanent corps.

"The institution, in order to produce the greatest amount of useful effect with a given expenditure of income, must be a unit in plan and a unit in purpose. Each assistant must not merely have regard to the advancement of his own specialty, but the good of the whole; and though he may be assigned a specific duty, he should be ready and willing, at the call of the Secretary, to render service in any other. Without a system of government which will insure this, not only the usefulness of the institution will be greatly abridged, but its very existence jeoparded."

The committee submit to the Board the following resolutions:

Resolved, That the seventh resolution, passed by the Board of Regents on the 26th of January, 1847, requiring an equal division of the income between the active operations and the museum and library, when the buildings are completed, be and it is hereby repealed.

Resolved, That hereafter the annual appropriations shall be apportioned specifically among the different objects and operations of the institution, in such manner as may, in the judgment of the Regents, be necessary and proper, for each, according to its intrinsic importance, and a compliance in good faith with the law.

Respectfully submitted.

JAMES A. PEARCE, *Chairman.*

Mr. Mason offered the following resolution; which was adopted:

Resolved, That the report of the Special Committee just made be laid on the table for further consideration, and that the papers referred to in the report be communicated to the Board for their examination; and that said report, and such report of a minority of the committee as may be made in the recess of the Board, be printed.

On motion of Mr. English, the Board then adjourned, to meet on Saturday, the 8th of July, at 10 o'clock, a. m.

July 8, 1854.

An adjourned meeting of the Board of Regents was held on Saturday, July 8, at 10 o'clock, a. m.

Present, Messrs. Bache, Douglas, English, Hawley, Mason, Pearce, Rush, Stuart, Totten, Towers, and the Secretary.

In the absence of the Chancellor, Mr. Hawley was called to the chair.

John T. Towers, Esq., mayor elect of the city of Washington, appeared and took the seat in the Board vacated by Mr. Maury, late mayor.

The Secretary laid before the Board the sixth volume of Smithsonian Contributions to Knowledge.

Mr. Mason, from the Select Committee, on the resolutions of Messrs. Fitch and Meacham, offered the following resolution:

"The Secretary of the institution and of this Board is, by the seventh section of the act 'to establish the Smithsonian Institution,' required to discharge the duties of 'librarian and keeper of the museum,' having, with the consent of the Board of Regents, power to employ assistants, the better to enable him to discharge those duties; for a better construction whereof—

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"*Be it resolved*, That whilst power is reserved in the said section to the Board of Regents, to remove both the Secretary and his assistants, in the opinion of the Board, power, nevertheless, remains with the Secretary to remove his said assistants."

Mr. English moved to amend the resolution by inserting the words "*with the consent of the Board of Regents*," after the words "power, nevertheless, remains with the *Secretary*."

Mr. Stuart moved that the consideration of Mr. Mason's resolution be postponed till the next meeting of the Board. On this question the yeas and nays were demanded.

Those voting in the affirmative:

YEAS.—Messrs. Douglas, English, Stuart, Towers—4.
NAYS.—Messrs. Bache, Hawley, Mason, Pearce, Totten—5.

So the motion was not carried.

The question was then taken on the amendment offered by Mr. English to Mr. Mason's resolution, and the yeas and nays taken:

YEAS.—Messrs. Douglas, English, Stuart, Towers—4.
NAYS.—Messrs. Bache, Hawley, Mason, Pearce, Totten—5.

So the amendment was lost.

Mr. Douglas moved a postponement of the subject for a week from next Friday.

The yeas and nays were taken on this motion:

YEAS.—Messrs. Douglas, English, Stuart, Towers—4.
NAYS.—Messrs. Bache, Hawley, Mason, Pearce, Totten—5.

So the motion was lost.

The question was then taken on Mr. Mason's resolution; which was adopted:

YEAS.—Messrs. Bache, Hawley, Mason, Pearce, Rush, Totten—6.
NAYS.—Messrs. Douglas, English, Stuart, Towers—4.

Mr. Stuart moved to postpone the consideration of the resolutions appended to the report of the Select Committee on the resolutions of Messrs. Fitch and Meacham till the next annual session.

A division was called for—ayes 3, noes 6.

So the motion was lost.

Mr. Douglas moved to postpone the consideration for two weeks.

A division was called for—ayes 4, noes 6.

So the motion was lost.

Mr. English moved that the Board adjourn.

This motion was withdrawn to allow the chairman of the Executive Committee, Mr. Pearce, to bring forward the appropriations for the year recommended by the committee, and reported to the Board, April 29, 1854.

On motion, the appropriations, as reported by the Executive Committee, were adopted—ayes 7, noes 3.

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The Secretary stated to the Board that he had employed Mr. Lorin Blodget to reduce and discuss the meteorological observations collected by the Smithsonian Institution, and that some misunderstanding had arisen between this gentleman and himself as to the adjustment of his claims in reference to the work, which he proposed to refer to the Executive Committee, and if necessary to a commission of examination, one of whom might be appointed by the Secretary, another by Mr. Blodget, and a third by the two persons so appointed.

Whereupon, on motion of Mr. Mason, it was—

Resolved, That the Executive Committee be authorized to investigate and settle the business presented to the Board by the Secretary.

Mr. English then renewed his motion to adjourn.

Adopted—ayes 6, noes 4.

The Board then adjourned *sine die*.

January 8, 1855.

In accordance with a resolution of the Board of Regents of the Smithsonian Institution, fixing the time of the beginning of their annual meeting on the first Wednesday of January of each year, the Board met this day in the Regents' room.

Present, Messrs. Bache, Berrien, Douglas, Mason, Pearce, Rush, Towers, and the Secretary.

In the absence of the Chancellor, Mr. Pearce was called to the chair.

The Secretary informed the Board of the re-election by joint resolution of Congress of Hon. Rufus Choate, of Massachusetts, and Hon. Gideon Hawley, of New York, as Regents of the Smithsonian Institution for six years ensuing.

On motion of Mr. Mason the Board adjourned to meet on Friday, January 12, at 10 o'clock, a. m., and the Secretary was requested to inform the absent members of the Board that the report of the Select Committee on the distribution of the income would then be taken up for consideration.

January 12, 1855.

An adjourned meeting of the Board of Regents of the Smithsonian Institution was held on Friday, January 12, at 10 o'clock, a. m.

Present, The Chancellor, Roger B. Taney, Messrs. Bache, Berrien, Choate, Douglas, English, Hawley, Mason, Meacham, Pearce, Rush, Stuart, Totten, Towers, Professor Henry, Secretary, and Mr. Seaton, Treasurer.

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The minutes of the last meeting were read and approved.

A communication from J. W. Simonton, Washington editor of the *New York Daily Times*, and S. Thayer, of the *New York Evening Post*, asking permission to attend the meetings of the Board to report its proceedings, was read.

Mr. Meacham moved that the request be granted; which was lost.

The order of the day being the consideration of the report and resolutions of the Select Committee on the distribution of the income, the first resolution was read, namely:

Resolved, That the seventh resolution passed by the Board of Regents on the 26th of January, 1847, requiring an equal division of the income between the active operations and the museum and library when the buildings are completed, be, and is hereby, repealed.

Remarks were made by Messrs. Choate, Pearce, Douglas, and Berrien.

On motion of Mr. Mason the yeas and nays were ordered.

The question was then taken on the adoption of the first resolution as follows:

YEAS—The Chancellor, Roger B. Taney, Messrs. Bache, Berrien, Hawley, Mason, Pearce, Rush, and Totten—8.
NAYS—Messrs. Choate, Douglas, English, Meacham, Stuart, and Towers—6.

The second resolution was then read:

Resolved, That hereafter the annual appropriations shall be apportioned specifically among the different objects and operations of the institution in such manner as may, in the judgment of the Regents, be necessary and proper for each, according to its intrinsic importance, and a compliance in good faith with the law.

The question being taken on this resolution it was adopted.

YEAS—The Chancellor, Roger B. Taney, Messrs. Bache, Berrien, Hawley, Mason, Pearce, Rush, Totten, Towers—9.
NAYS—Messrs. Choate, Douglas, English, Meacham, and Stuart—5.

Mr. Meacham then offered the following resolution, which was the first reported by him in his minority report, namely:

Resolved, That a compliance in good faith with the letter and spirit of the charter of the Smithsonian Institution, requires that a large proportion of the income of the institution should be appropriated "for the gradual formation of a library composed of valuable works pertaining to all departments of human knowledge."

The question being taken on this resolution it was lost.

YEAS—Messrs. Choate, Douglas, Meacham, and Stuart—4.
NAYS—The Chancellor, Roger B. Taney, Messrs. Bache, Berrien, English, Hawley, Mason, Rush, Pearce, and Totten—9.

Mr. Meacham's second resolution was then read, namely:

Resolved, That the expenditures for the library shall be made under the direction of a "library committee" of three members, to be annually elected by the Board of Regents from members not upon the Executive Committee, or upon other committees which may be appointed to superintend the affairs of other departments or objects of the institution.

The question being taken on this resolution it was lost.

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YEAS—Messrs. Choate, Douglas, and Meacham—3.
NAYS—The Chancellor, Roger B. Taney, Messrs. Bache, Berrien, English, Hawley, Mason, Pearce, Rush, Stuart, and Totten—10.

On motion of Mr. Pearce the following resolution was adopted:

Resolved, That a committee of three be appointed by the Chancellor to confer with a Committee of the Establishment as to suitable means of communication between the two bodies, and to report thereon at a subsequent meeting of the Regents.

The Chancellor appointed Messrs. Mason, Douglas, and Totten.

A communication from Gilbert A. Cameron was read; which, on motion, was referred to the Building Committee.

The treasurer then made a statement of the condition of the finances of the institution; which was referred to the Executive Committee.

The Board then adjourned to meet on Saturday, 13th January, at 10 o'clock.

January 13, 1855.

An adjourned meeting of the Board of Regents of the Smithsonian Institution was held on Saturday, January 13, at 10 o'clock, a. m.

Present, The Chancellor, Roger B. Taney, Messrs. Bache, Berrien, Choate, English, Hawley, Mason, Meacham, Pearce, Rush, Totten.

The minutes of the last meeting were read and approved.

Mr. Pearce, in behalf of the Executive Committee, presented the estimate of appropriations for the year 1855; which, on his motion, was laid on the table for the present.

Mr. Pearce, in behalf of the Executive Committee, presented the following report in relation to the case of Mr. Blodget, which had been referred to that committee by the Board:

At a meeting of the Board of Regents held Saturday, July 8, 1854, the Executive Committee was authorized to investigate and settle the business presented to the Board by the Secretary, in reference to the adjustment of the claims of Mr. Lorin Blodget.

The committee having investigated the matter referred to them, present the following report in part:

Mr. Blodget was employed by the Secretary of the Institution to aid him by such labors in relation to the meteorological observations under the direction of the Smithsonian Institution as the Secretary might assign. The rates of compensation for these services were fixed from time to time by the same officer, and Mr. Blodget is entitled to no other compensation than that paid to him. His footing in the institution was simply that of a temporary employee of the Secretary, in whose hands rested the determination of his duties, pay, and duration of service. Employed and paid for these services in connection with the meteorological operations, the fruits of his labors belong exclusively to the institution.

In addition to these payments the committee is prepared on receiving satisfactory statements or vouchers from Mr. Blodget of reasonable expenses incurred during any journeys he may have made with the consent of the Secretary for objects connected with his duties in meteorology in the institution, to refund the amount, as also any moneys which may appear to the satisfaction of the committee to have been paid out by him and not already repaid for clerical or other services connected with the mete-

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erological observations of the Smithsonian Institution, and for which an equivalent advantage has been received.

J. A. PEARCE,
JOS. G. TOTTEN,
A. D. BACHE,
} *Executive Committee.*

Communications and a memorial from Mr. Blodget to the Board were then read, and ordered to lie on the table.

The report of the Executive Committee was then adopted unanimously.

It being stated to the Board by Mr. Choate, on behalf of Mr. C. C. Jewett that he did not design, for reasons stated by him, to ask the action of the Regents at their present meeting on his memorial of the 3d July last, communicated to the Board through the Secretary, Mr. Mason moved that the said paper be returned by the Secretary to Mr. Jewett.

On motion the memorial to the Board was then read.

Mr. Choate then requested permission in behalf of Mr. Jewett to withdraw the memorial; which was granted.

The Secretary then stated to the Board that he had deemed it his duty since its last session to remove Mr. Charles C. Jewett from the office of assistant to the Secretary. He deeply regretted the necessity which he had been under to exercise this authority, declared to be vested in him by the Board, and for the present he rested his reasons for the act on the character of a paper, submitted by Mr. Jewett to the Select Committee on the distribution of the income, and upon the opinion in regard to that paper expressed by the committee to which it was submitted.

Mr. Pearce offered the following:

The Secretary having stated to the Board that since the last meeting of the Regents in 1854, he had removed Mr. Jewett, under the authority declared to be vested in him by the resolution of July 8, 1854.

Resolved, That while the Board regret the necessity of Mr. Jewett's removal, they approve of the act of the Secretary.

Resolved, That this approval by the Board is not deemed by them to be essential to the validity of the act of the Secretary in so removing Mr. Jewett.

The Board then adjourned to meet on Monday, January 15th, at 10 o'clock.

January 15, 1855.

The Board of Regents met this day at 10 o'clock.

Present, the Chancellor, Roger B. Taney, Messrs. Bache, Berrien, Douglas, Hawley, Mason, Pearce, Rush, Towers, and Totten.

The Chancellor took the chair, and the minutes of the last meeting were read and approved.

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Mr. Pearce's resolutions offered at the last meeting on Saturday were then taken up.

The question being taken on the first resolution, it was adopted.

YEAS—The Chancellor, Roger B. Taney, Messrs. Bache, Berrien, Hawley, Mason, Pearce, Rush, Totten—8.
NAYS—Messrs. Douglas, Towers—2.

The second resolution was then taken up and adopted.

YEAS—The Chancellor, Roger B. Taney, Messrs. Bache, Berrien, Hawley, Mason, Pearce, Rush, Totten—8.
NAYS—Messrs. Douglas, Towers—2.

On motion of Mr. Rush, Mr. John T. Towers was elected to fill the vacancy in the Building Committee.

The report of the Executive Committee, making estimates of appropriations for the year 1855, &c., was then taken up and adopted.

On motion of General Totten, the following resolution was adopted:

Resolved, That in case the sum required for the completion of the Smithsonian building should exceed the amount appropriated for the same, that the Building Committee have authority to pay for any unavoidable excess out of funds on deposit to the credit of the institution.

The report of the Building Committee was then read, and on motion adopted.

A memorial and printed pamphlet from John Lord, of Portland, Maine, was read and ordered to lie on the table.

The Board then adjourned to meet on Saturday, January 27, at 10 o'clock, a. m.

January 27, 1855.

An adjourned meeting of the Board of Regents of the Smithsonian Institution was held on Saturday, January 27, 1855, in the Regents' room.

Present, the Chancellor, Roger B. Taney, Messrs. Bache, Pearce, Stuart, Towers, Totten.

The minutes of the last meeting were read and approved.

The following communication was read:

HOUSE OF REPRESENTATIVES, WASHINGTON, *January* 26, 1855.

SIR: I am instructed by the Special Committee of the House of Representatives, raised in conformity with the accompanying resolution, to request you to inform the Board of Regents of the Smithsonian Institution that the committee is ready to proceed to the discharge of its duties—and that any communication the Board may think proper to make will be most respectfully entertained.

The committee will meet on Thursday, February 1, at half past 7 o'clock, p. m., in the rooms of the Hon. W. H. Witte, at the National Hotel.

The presence of an authorized representation of the Board, during the investiga-

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tion of the matters referred to the Committee, would aid us in the performance of the duty imposed by the order of the House of Representatives.

Very respectfully, your obedient servant,

CHARLES W. UPHAM, *Chairman.*

Professor JOSEPH HENRY,
Secretary of the Smithsonian Institution.

Copy of resolution of House enclosed.

"HOUSE OF REPRESENTATIVES UNITED STATES,

"*January* 17, 1855.

"On motion of Mr. Meacham—

"*Resolved*, That the letter of Hon. Rufus Choate, resigning his place as Regent of the Smithsonian Institution, be referred to a Select Committee of five, and printed; and that said committee be directed to inquire and report to this House whether the Smithsonian Institution has been managed, and its funds expended, in accordance with the law establishing the institution; and whether any additional legislation be necessary to carry out the design of its founders, and that said committee have power to send for persons and papers.

"The Speaker thereupon appointed Mr. Upham, of Massachusetts; Mr. Witte, of Pennsylvania; Mr. Taylor, of Tennessee; Mr. Wells, of Wisconsin; and Mr. Puryear, of North Carolina, the said committee."

On motion of Mr. Pearce, it was—

Resolved, That a committee of five be appointed by the Chancellor to represent the Board of Regents before the committee of the House of Representatives.

The Chancellor appointed Messrs. Pearce, Mason, Bache, Rush, and the Secretary, as the committee.

The Secretary laid before the Board his annual report.

Communications, and a bill of charges from Lorin Blodget, were read, and, on motion of Mr. Stuart, referred to the Executive Committee.

Communication from G. Cameron, the contractor for the building, was read, and referred to the Building Committee.

Communication from J. M. Stanley, artist, offering to dispose of his Indian gallery, was read, and, after remarks, on motion, it was—

Resolved, That the Secretary be instructed respectfully to decline the offer made to the Board by Mr. Stanley.

A communication relative to the *Geographical and Commercial Gazette* was read, and referred to the Executive Committee.

The Board then adjourned to meet on Saturday, February 10, at 10 o'clock, a. m.

February 10, 1855.

Present, Messrs. Bache, Mason, Pearce, Totten, and the Secretary. There being no quorum, adjourned to Saturday, February 17.

February 17, 1855.

Messrs. English, Pearce, Totten, Towers, and the Secretary present. There being no quorum, adjourned to meet on Saturday, February 24.

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February 24, 1855.

An adjourned meeting of the Board of Regents was held on Saturday, February 24, 1855, at 10 o'clock, a. m.

Present, The Chancellor, Roger B. Taney, Messrs. Bache, Douglas, English, Pearce, Totten, Seaton, Treasurer, and the Secretary.

A report entitled "Report of the Hon. James Meacham, of the special committee of the Board of Regents of the Smithsonian Institution, on the distribution of the income of the Smithsonian fund," &c., was presented, and, on motion, laid on the table.

On motion of Mr. English, the following resolution was adopted:

Resolved, That three persons be appointed a committee of finance, who shall inquire into the safety and propriety of the present investment of the funds of the institution, not in the Treasury of the United States, and who shall have the authority to withdraw the said funds from the present place of deposit, and invest them otherwise in the name of the Regents of the Institution.

The Chancellor appointed Messrs. English, Pearce, and Mason as the committee.

The following report was read:

The committee to whom was referred the resolution of the "Establishment," proposing a conference by committee with the Board of Regents, for the purpose of determining the mode of communication between the establishment and the Board of Regents, submit the following report:

That they have met and conferred with the committee appointed for that purpose by the Establishment, and have, after consultation, agreed upon the following resolutions, to be reported by the committees to their respective constituencies, and the committee recommend that they be adopted by the Board of Regents, and made a part of the by-laws.

1. The general communication between the institution and the Board of Regents shall be made through their common secretary.

2. The secretary will regularly communicate to each body all such acts of either as may concern the other respectively, or may require their joint action.

3. When either body may desire any special communication with the other, it will propose a conference by committee.

All which is respectfully submitted.

J. M. MASON, *Chairman.*

January, 1855.

The report of the committee was approved.

The following resolution was offered by Mr. Douglas, and adopted by the Board:

Resolved, That all correspondence of this institution with any person or society shall be conducted by the Secretary, and no assistant or employee shall write or receive any official letter or communication pertaining to the affairs of the institution, except under the authority and by the direction of the Secretary, and all such correspondence shall be duly registered and recorded in such manner as the Secretary shall direct.

The Board then adjourned to meet at the call of the Secretary.

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January 2, 1856.

In accordance with a resolution of the Board of Regents of the Smithsonian Institution, fixing the time of the beginning of their annual meeting on the first Wednesday of January of each year, the Board met this day in the Regents' room at 12 o'clock m.

Mr. Rush was requested to take the chair.

The Secretary stated that, owing to the House of Representatives not having elected a Speaker, no Regents had yet been appointed to fill the vacancies in the Board from that body.

There being no quorum present, the Board adjourned to meet on Saturday, January 12th, at 12 m.

January 12, 1856.

A meeting of the Board was held this day at 12 o'clock.

Present, Messrs. Mason, Rush, Totten, Bache, Seaton, Treasurer, and the Secretary.

There being no quorum present, the new Regents not yet having been appointed, the Board adjourned to meet on Saturday, January 26th.

January 26, 1856.

A meeting of the Board was held this day at 12 m.

Present, Messrs. Pearce, Mason, Rush, Totten, and the Secretary.

There being no quorum, the Board adjourned to meet at the call of the Secretary, as soon as the vacancies should be filled by Congress.

March 1, 1856.

An adjourned meeting of the Board was held this day at 12 m.

Present, Messrs. Pearce, Mason, English, Warner, Totten; Seaton, Treasurer, and the Secretary.

Mr. Pearce was called to the chair.

The Secretary announced the election, by joint resolution of the Senate and House of Representatives, of the Hon. George E. Badger, of North Carolina, and Professor Cornelius C. Felton, of Massachusetts, as Regents to fill the vacancies occasioned by the death of the Hon. John Macpherson Berrien, and the resignation of the Hon. Rufus Choate.

Also, the appointment, by the Speaker of the House of Representatives, of the Hon. W. H. English, of Indiana, Hon. H. Warner, of Georgia, and the Hon. B. Stanton, of Ohio, as Regents on the part of the House.

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Mr. Seaton, Treasurer, presented the statement of receipts and expenditures for the year 1855, which was referred to the Executive Committee.

The Secretary presented and read his report of the condition and operations of the Institution for the past year, which was accepted.

It being announced by the Secretary that the Hon. J. Macpherson Berrien, one of the Regents, had departed this life since the last annual session of the Board, Mr. Mason offered the following resolutions, accompanying them with remarks suitable to the occasion:

Resolved, That the Regents of the Smithsonian Institution have heard, with deep and sincere regret, that since their last annual meeting, the Hon. J. Macpherson Berrien, late one of their associates, has departed this life:

Resolved, That whilst deploring the severance of so enlightened and able a coadjutor from the trust committed to the Regents of the Institution, they sympathize with the country in the loss it has sustained by the death of an eminent and virtuous citizen.

Resolved, That, in testimony of their high respect for the memory of their late associate, the members of this Board will wear the customary badge of mourning for the period of thirty days.

Resolved, That these resolutions be entered upon the journal, and a copy of them be transmitted to the family of the deceased.

The Board then adjourned till Saturday, March 8, at 11 o'clock, a. m.

March 8, 1856.

The Board of Regents met at 11 o'clock a. m.

Present, The Chancellor, Hon. R. B. Taney, and Messrs. Pearce, English, Warner, Totten, and the Secretary.

The minutes of the last meeting were read and adopted.

Mr. English presented the report of the Building Committee for the year 1855; which was read and adopted.

Mr. Pearce presented the annual report of the Executive Committee, containing an account of the finances, the receipts and expenditures during the year 1855, the estimates for appropriations for 1856, &c., which was read and adopted.

On motion of Mr. Pearce, the following resolution was adopted:

Resolved, That, in order to give sufficient time to make up the accounts for the year, the annual meeting of the Board shall hereafter be held on the *third* Wednesday of January, instead of the first.

The Secretary presented a letter from Joseph H. Patton, Esq., of New York, relative to the Wynn estate; which, after several documents relating to the subject had been read, was referred to Mr. Mason, to whom former communications on this business had been submitted.

It was stated by the Secretary that Messrs. Corcoran & Riggs

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were not desirous to retain in their hands the extra funds of the institution; whereupon, after remarks as to the proper disposition of the money, on motion of Mr. Warner, it was—

Resolved, That the committee appointed on the 24th of February, 1855, be directed to inquire and report upon the propriety and manner of permanently investing the money of the institution now in the hands of Messrs. Corcoran & Riggs.

The Secretary read a communication from Frederick Gotteri, of Malta, received through the Department of State, relative to the establishment of a school for the instruction of persons in this country in silk culture and manufactures.

On motion, the letter was referred to the Commissioner of Patents.

A communication from John Phillips, Esq., Assistant General Secretary of the British Association for the Advancement of Science, was read, containing the following extract from the proceedings of that body:

"A communication from Professor Henry, of Washington, having been read containing a proposal for the publication of a catalogue of philosophical memoirs scattered throughout the transactions of societies in Europe and America, with the offer of co-operation on the part of the Smithsonian Institution, to the extent of preparing and publishing, in accordance with the general plan which might be adopted by the British Association, a catalogue of all the American memoirs on physical science, the committee approve of the suggestion, and recommend that Mr. Cayley, Mr. Grant, and Professor Stokes, be appointed a committee to consider the best system of arrangement, and to report thereon to the council."

The Secretary having stated to the Board that a number of the steamship and railroad companies had granted special facilities to the institution, in forwarding its packages free of cost, and particularly in granting a free passage to its agent sent to California to make collections in natural history, &c.

On motion of General Totten, the following resolution was adopted:

Resolved, That the Secretary, on the part of the Regents of the Smithsonian Institution, return thanks to the United States Mail Steamship Company, M. O. Roberts, president; Pacific Mail Steamship Company, W. H. Aspinwall, president; South American Mail Steamship Company, Don Juan Matheson, president; Mexican Gulf Steamship Company, Harris & Morgan, agents; and the Panama Railroad Company, David Hoagley, president, for their liberality and generous offices in relation to the transportation, without charge, of articles connected with the operations of the institution.

The Secretary read the following letter:

HAMILTON COLLEGE,
CLINTON, ONEIDA COUNTY, N. Y., *February* 2, 1856.

To the Regents of the Smithsonian Institution:

The trustees of Hamilton College, in the State of New York, made, on the 22d day of July, 1854, a contract with Messrs. C. A. Spencer & Co., of Canastota, in the same State, for the construction of an "equatorial telescope of the first class, with all the mountings and other incidents necessary and usual thereto."

There is a provision in this agreement, that "when the telescope and work are

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finished and put up in the observatory, the whole is to be submitted to the examination of three men of science, to be agreed upon by the parties, and their judgment and decision as to the character of the telescope and the whole work, and whether the contract has been fully performed on the part of the builders, shall be final and conclusive."

The instrument is now nearly completed. The diameter of the object-glass is thirteen and one-half inches.

The undersigned, as a committee in behalf of the college, request that the above-named examining board of scientific men may be appointed by your body. They ask this for the following reasons:

First. This telescope is the largest ever constructed in this country—constructed in the face of many obstacles, with an adverse public opinion. If it be equal to instruments made in Europe, its construction is a triumph of American genius in a hitherto untried field. The contractors, if successful, deserve that their success should be made known through some medium whose judgment shall be rigid and impartial, and shall have a character to be respected abroad as well as at home.

Again. The funds for the construction of this instrument, and the observatory to which it is attached, were contributed in various sums by many persons interested in the advancement of science, and scattered throughout the State of New York. To these persons our institution pledged itself to secure a first-class instrument. The college corporation desires to satisfy them by an announcement from an authoritative quarter that it has faithfully fulfilled the trust, and that the contractors have produced the exact instrument provided for in the specifications of the contract.

Furthermore, as persons interested in the advancement of science, and desirous that telescopes hereafter built in this country may be thoroughly and satisfactorily tested, the undersigned, in behalf of the college, would be glad to establish a precedent, which might lead the purchasers of other astronomical instruments to submit the question of their proper construction to your body, as being an institution central in its position and national in its character.

We are authorized to state that the contractors join with the corporation in this application.

Should this proposition be accepted by you, we would like to receive notice to that effect, and of the names of the gentlemen who may be selected as such committee.

CHARLES AVERY,
ORIN ROOT,
OTHNIEL S. WILLIAMS,
THEODORE W. DWIGHT,
Committee.

On motion of Mr. English, the following resolution was adopted:

Resolved, That the letter of the committee of the trustees of Hamilton College be referred to Messrs. Bache, Totten, and Henry, with authority to comply with the request contained in said letter.

The following letter from the Corresponding Secretary of the American Academy of Arts and Sciences was read:

AMERICAN ACADEMY OF ARTS AND SCIENCES,
BOSTON AND CAMBRIDGE, MASSACHUSETTS, *August*, 1855.

MY DEAR SIR: The following extract from the record of the annual meeting in May last has just been furnished me by the recording secretary:

"Professor Agassiz referred to the allusion in the librarian's report to the Smithsonian Institution, and expressed in strong language his sense of the indebtedness of the scientific world to that Institution, for its enlightened efforts to diffuse knowledge, particularly as a medium of exchange of publications. In conclusion, he moved *that the thanks of the Academy be presented to the Smithsonian Institution, for its efficient agency in effecting for the Academy its exchanges with societies and individuals*, which was unanimously adopted."

I have great pleasure in forwarding to you the vote of the Academy, in obedience to its instructions.

And I remain, very respectfully, your obedient, faithful servant,

ASA GRAY,
Corresponding Secretary.

Professor HENRY,
Secretary of the Smithsonian Institution.

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The Board then adjourned to meet on Saturday, the 22d instant, at 11 o'clock a. m.

March 22, 1856.

The Board of Regents met this day, at 11 o'clock.

Present, Hon. R. B. Taney, the Chancellor, Messrs. Mason, Douglas, English, Warner, Totten, Towers, Seaton, Treasurer, and the Secretary.

The minutes of the last meeting were read and approved.

Mr. Mason stated that he had made an examination of the papers referred to him relative to the Wynn estate.

After some remarks respecting the proper course to be pursued, on motion of Mr. Douglas, it was—

Resolved, That Messrs. Mason and English be appointed a committee to draught a bill, and present it to Congress at their discretion, asking the authority for the Institution to receive funds or legacies, and for power to sue and be sued.

The Secretary presented the subject of the removal of the collection of objects of natural history, now in the Patent Office, to the Smithsonian building.

The Secretary presented to the Board a manuscript work on bibliography by Mr. Ludewig, which had originally been offered to the Smithsonian Institution, but which Mr. Trübner, a liberal and intelligent publisher in London, had now undertaken to present to the world at his own expense.

The following letter from Mr. Stone, of Washington, was read:

MOUNT PLEASANT,
WASHINGTON CITY, *February* 13, 1856.

DEAR SIR: Some time since I spoke to you of the propriety and advantage of procuring from Europe copies in plaster of the best antique and modern statues and bas-reliefs. Having since reflected on the importance of cultivating a taste for the fine arts in our country, I now communicate to you my views, knowing that the object will find in you a zealous friend and advocate.

I am aware, to undertake what is required will subject you to some trouble and opposition, owing to the absence of that knowledge, to procure which your exertions are solicited.

As the country advances in science, the elegancies of life are in demand; decorations, ornaments, &c., in every fabric, find purchasers, and the higher the state of refinement, the more is art required. To meet this demand, it is requisite that we should have the advantage of seeing what has already been done in sculpture to serve as a basis. Thus, we may not only cultivate the talent of the artist, but the taste of the consumer, and thus the arts will meet with proper encouragement.

It is not expected that all who study from the models will acquire equal eminence; still all who work with zeal will be improved and find employment in the various branches of trade that require cultivated talent, as in works of design, including the various factories for using the loom for wool, cotton, or silk, potteries, including porcelain ware, founderies, &c. Painters, architects, and sculptors are usually thought to be those only benefitted by schools of art; but it is not so; they are a few among the thousands who will be prepared to give beauty and elegance to every fabric of manufacture known in the mechanic arts.

On examination it will be found that the cultivation of the art of design will thus be of immense value to the country. On application being made by our minister in Rome, casts would be permitted to be taken from the moulds in the possession of the

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Government, the cost of which would be trifling. The statues would decorate the Smithsonian building, and many could be so placed as to appear as accessories to it.

If a school of design is formed, it may be independent of the Institution. But should the Smithsonian Institution deem it of sufficient importance, and consider it as one of the means of diffusion of useful knowledge among men, and grant an occasional lecture as on other subjects, it would accomplish much, and Congress may be made to feel that the interests of the country demand their fostering care in regard to the arts. I think you will find that ours is the only Government that has not seen and felt the importance to manufacturers of cultivating the fine arts. The great strife with manufacturers is to obtain elegance and beauty without interfering with durability. Beauty and symmetry should be made essentials in the manufacture of the simplest articles, as they may be attained without interfering with more substantial qualities. Articles manufactured with elegance and good proportion will always be preferred to those of only equal strength and durability, of uncouth form. It is true that we may manufacture from forms and patterns produced by the forethought and liberality of other nations, and still be inferior to what our own genius would produce, were the facilities of cultivation in the fine arts made equal with those of other nations. The free institutions of our country cause men to rely in a measure on their own resources, thus early developing and practising those inventive powers so peculiar to our people. We are not bound down by the local laws and prejudices of societies as in the Old World. Here a man, if he pleases, is his own carpenter, mason, or smith. His inquiring mind and ingenuity lead him to undertake and accomplish what he desires. How little will be required to cultivate talent and produce men who will record the history of their country in marble or imperishable bronze—in the language of nature, always to be understood. Our monuments and antiquities will not carry with them the odor of royalty and nobility, but forms of elegance and beauty.

Very respectfully, your obedient servant,

WILLIAM J. STONE.

Prof. HENRY,
Secretary Smithsonian Institution.

The Secretary exhibited a new form of meteorological blanks which he had prepared for the joint use of the institution and the Patent Office, and also a simple form of the rain-gauge, of which a number had been ordered for distribution to different parts of the country. They are so constructed as to be readily transmitted by mail.

The Secretary presented the following resolutions, which had been unanimously adopted by the Illinois State Board of Education, at a meeting held in March last:

"Whereas the Illinois State Board of Education concur in the opinion of the necessity and importance of the meteorological observations to be made, in accordance with the system established by the Smithsonian Institution, of simultaneous observations in every State of this Union; and whereas that institution has undertaken to collect and digest all the observations which may be made on this continent; therefore—

"*Resolved*, That we will co-operate with said institution in order to obtain full and reliable reports from the various sections of this State.

"*Resolved*, That each member of this Board select some competent and reliable person in his congressional district to take charge of the observations in said district, and from time to time report the same to the Secretary of our Board.

"*Resolved*, That a committee of four be appointed by the President to memorialize the Legislature for an appropriation to aid in the purchase of a set of meteorological instruments for each Congressional district in our State.

"*Resolved*, That ——— ——— be appointed actuaries, in behalf of this Board, to collect and prepare specimens of the natural history and products of our State, and to co-operate with that department of the Smithsonian Institution."

The blank in the last resolution was filled with the names of

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Robert Kennicott, of Cook county; Dr. J. Niglas, of Peoria county; and W. F. M. Arny, of McLean county.

The Secretary also presented from the author a manuscript translation of a memoir on the origin of the human race, by Baron Muller, of Marseilles, France.

He also exhibited a copy of the great work on Egypt by Lepsius, presented to the library by the Prussian Government; a very expensive and valuable work on Russian antiquities, from the Imperial Library at St. Petersburg; a portfolio of colored engravings to illustrate the Mosque of St. Sophia, Constantinople, from the Sultan; and other valuable donations and articles received in exchange.

The Board then adjourned, to meet at the call of the Secretary, and afterwards visited the different parts of the building.

June 18, 1856.

The Board of Regents met this day at 11 o'clock, in the hall of the institution.

Present, Hon. R. B. Taney, Chancellor, Hon. J. A. Pearce, W. H. English, H. Warner, A. D. Bache, William B. Magruder, and the Secretary; and, by special invitation, Mr. W. W. Corcoran.

The Secretary stated that Dr. W. B. Magruder, having been elected Mayor of the city of Washington, is *ex officio* a Regent of the institution, and therefore takes his seat in the Board.

Mr. English, from the Finance Committee, made the following report:

The Committee on Finance, charged by the resolution of March 8, 1855, with the duty of inquiring into and reporting upon the propriety and manner of permanently investing the money of the institution now in the hands of Messrs. Corcoran & Riggs, respectfully report:

1st. That in the judgment of the committee the best disposition to make of said fund would be to add it to the funds of the institution already in the Treasury of the United States, and to that end, your committee recommend that application be made to Congress for an act authorizing such addition.

2d. As the money is at present yielding the institution no interest, your committee further recommend, that for the time being, and until favorable action can be procured by Congress in relation to receiving said extra fund into the United States Treasury, the same be invested under the direction of the Finance Committee, in the stocks and bonds of such sound interest paying States, and at such rates as the Board of Regents may select and determine.

All of which is respectfully submitted.

The following resolutions were offered:

Resolved, That the report of the Committee on Finance be concurred in, and that the Chancellor appoint a committee to make application to Congress for an act authorizing the receipt of the extra fund into the Treasury of the United States.

And further be it resolved, That until such action by Congress can be procured, the Committee on Finance invest said fund, in the name of the Regents of the Smithsonian Institution, in such bonds and stocks as are mentioned in the following table, and

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at such rates, including brokerage, as will not exceed one per cent. above the rates mentioned in said table, viz:

35,000 Virginia	6	per cent.	bonds	at 95 cents.
30,000 Pennsylvania	5	"	"	at 85 "
30,000 Indiana	5	"	"	at 85 "
30,000 Missouri	6	"	"	at 85 "

On motion of Dr. Magruder, the report of the committee was accepted, and the resolutions were adopted.

The Chancellor appointed Hon. J. A. Pearce, of the Senate, and Hon. H. Warner, of the House of Representatives, a committee to make application to Congress for an act authorizing the receipt of the extra fund into the Treasury of the United States.

The Board then adjourned to meet at the call of the Secretary.

July 9, 1856.

The Board of Regents met this day in the committee room of the Library of Congress.

Present, Hon. J. A. Pearce, James M. Mason, S. A. Douglas, W. H. English, H. Warner, A. D. Bache, and the Secretary.

The Secretary stated that Mr. Corcoran had informed him that he could not purchase the stocks directed to be bought by the Board at its last meeting at the prices limited by the resolution of June 18, 1856.

On motion of Dr. Magruder, it was—

Resolved, That the Secretary, under the direction of the Committee on Finance, be instructed to purchase the said stocks at the market rate, and if any of said stocks have advanced in price, the Secretary, under the instruction of said committee, may invest in other stocks at discretion.

The Board then adjourned *sine die*.

January 21, 1857.

In accordance with a resolution of the Board of Regents of the Smithsonian Institution, fixing the time of the beginning of their annual meeting on the third Wednesday of January of each year, the Board met this day in the hall of the institution.

Present, Hon. J. A. Pearce, Hon. W. H. English, Hon. B. Stanton, Professor Bache, and the Secretary.

No quorum being present, the Board adjourned to meet on Saturday, January 24, 1857, at 11 o'clock, a. m.

January 24, 1857.

The Board met this day at 11 o'clock, a. m.

Present, Hon. James A. Pearce, Hon. S. A. Douglas, Hon. W. H.

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English, Hon. B. Stanton, Hon. George E. Badger, Hon. W. B. Magruder, Professor C. C. Felton, and the Secretary.

In the absence of the Chancellor, Mr. Pearce was called to the chair.

The minutes of the meetings of June 18, 1856, July 9, 1856, and of January 21, 1857, were read and approved.

Hon. Mr. English, from the Committee on Finance, presented the following report:

The Committee on Finance, charged by resolutions of the Board of Regents with the duty of permanently investing the extra fund of the institution, beg leave to report that, in accordance with the resolution of July 9th, 1856, there have been purchased stocks and bonds of the States of Indiana, Virginia, and Tennessee, amounting in the aggregate to $135,500, and at a cost of $119,400, from which should be deducted the interest, accrued at date of purchase, say $1,000, leaving the net cost to the institution $118,400.

The annual interest upon these stocks and bonds amounts to $7,880, whereas, the interest upon the purchase money, as heretofore invested, was but $5,920, making an annual gain to the institution in the item of interest of $1,460.

For further and full particulars, the committee refer to the following report made to them by the Secretary of the Institution:

To the Committee on Finance of the Board of Regents of the Smithsonian Institution.

GENTLEMEN: In accordance with the resolution of the Board of Regents, adopted July 9th, 1856, authorizing the Secretary, under the direction of the Committee on Finance, to purchase State stocks for the institution with the extra fund, I respectfully submit the following report:

With the assistance of the Hon. Mr. English, and under the direction of the Committee on Finance, there have been purchased—

INDIANA five per cent. bonds, amounting to	$75,000	for	$63,000 00
and under the direction of the committee and through the agency of Messrs. Riggs & Co.,			
VIRGINIA six per cent. bonds, amounting to	53,500	for	49,832 50
including commission, and also of			
TENNESSEE six per cent. bonds	7,000	for	6,567 50

There remains of the extra fund in the hands of Riggs & Co., $600, which, together with the $5,000 drawn from this fund in 1855, to meet payments on the building, and which may be repaid from the balance now in the Treasury, will make the $125,000 intended to be invested.

The interest for six months received at the beginning of this year on these State stocks was	$3,690 00
The interest received from Messrs. Corcoran & Riggs on the extra fund previous to the investment was	2,533 33
Total interest on the extra fund, during 1856	$6,223 33

The stock now owned by the institution will yield, during the present year, (1857,) an interest of $7,880.

All of which is respectfully submitted.

JOSEPH HENRY, *Secretary.*

JANUARY 21, 1857.

On motion of Dr. Magruder, the report was accepted and adopted.

The statement of the treasurer, for 1856, was presented and referred to the Executive Committee.

Hon. Mr. English presented the report of the Building Committee, which was accepted.

On motion of Dr. Magruder, the Secretary was authorized to

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have the cisterns referred to in the report of the Building Committee securely arched over with brick, and one of them to be properly arranged for an ice-house.

The Board then adjourned to meet on Monday morning, at 10 o'clock, a. m.

January 26, 1857.

A meeting of the Board of Regents was held this day at 10 o'clock a. m.

Present, Hon. James A. Pearce, Hon. James M. Mason, Hon. S. A. Douglas, Hon. William H. English, Hon. Benjamin Stanton, Professor C. C. Felton, and the Secretary.

The minutes of the last meeting were read and approved.

On motion of Mr. Mason, it was—

Resolved, That the funds of the institution deposited with Messrs. Corcoran & Riggs, for the current expenses of the institution, be placed in the hands of Messrs. Riggs & Co., successors to Messrs. Corcoran & Riggs.

Mr. Pearce presented the report of the Executive Committee, showing the receipts and expenditures for the year 1856, and the estimates of appropriations for the year 1857.

The Secretary then presented the annual report of the operations of the institution during the year 1856, which was read in part.

The Board then adjourned to meet on Wednesday, January 28th, at 6½ o'clock, p. m.

January 28, 1857.

A meeting of the Board of Regents was held this evening, at 6½ o'clock, p. m.

Present, Hon. J. A. Pearce, Hon. J. M. Mason, Hon. B. Stanton, Hon. H. Warner, Professor C. C. Felton, Professor A. D. Bache, Hon. George E. Badger, and the Secretary.

The minutes of the last meeting were read and approved.

The Secretary concluded the reading of his report.

On motion of Mr. Mason, the report of the Secretary was accepted.

The report of the Executive Committee was then taken up and adopted.

The Secretary presented various communications, &c., to the Board.

Adjourned to meet at the call of the Secretary.

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March 16, 1857.

A meeting of the Board of Regents was held this day at 11 o'clock a. m.

Present: Hon. R. B. Taney, Chancellor, Hon. John C. Breckinridge, James M. Mason, S. A. Douglas, Gen. Jos. G. Totten, Prof. A. D. Bache, Wm. B. Magruder, and the Secretary.

The minutes of the last meeting were read and approved.

The Chancellor, Chief Justice Taney, then presented the following communication:

WASHINGTON, *March* 16, 1857.

GENTLEMEN: When the Board of Regents was originally organized it was deemed proper that the Vice-President of the United States for the time being should be elected as the Chancellor. The Institution exists under the authority of Congress, and they have made certain officers of the government *ex officio* Regents. The Vice-President is the highest in rank of the officers thus designated; and it would seem to be peculiarly proper that the one who presides over the deliberations of one branch of the national legislature should also preside over the deliberations of a scientific institution which the nation has brought into existence and fosters.

Unfortunate events have for some time past left the Government without a Vice-President elected by the people. And when that office was vacant the Regents conferred on me the office which had always before been filled by the Vice-President. And when I accepted it I regarded the appointment as a temporary one. The reason for the appointment has now happily ceased, and I desire to give the Regents an opportunity of restoring the original plan of organization, in which I fully concurred when it was adopted.

I therefore resign the office of Chancellor of the Institution, and at the same time return my thanks for the honor which the Regents bestowed upon me in electing me to that office.

But my resignation will not lessen the interest I feel in the institution. On the contrary, every year's experience has more and more convinced me of its usefulness and efficiency in promoting the objects of its founder, and I shall always be ready to offer my humble aid if I can be useful in advancing its prosperity and success.

I have the honor to be, with the highest respect, your obedient servant,

R. B. TANEY.

To the REGENTS OF THE SMITHSONIAN INSTITUTION.

Mr. Breckinridge, Vice President of the United States, moved that the present Chancellor, Chief Justice Taney, be re-elected to that office, expressing his unwillingness to assume the position which had been so long and so ably filled by its present occupant.

The motion was adopted unanimously, whereupon Judge Taney remarked that he was anxious to serve the Institution to the best of his ability, and he could not decline this expression of the confidence of the Board, if they insisted on his retaining the office of Chancellor.

The Secretary announced that, by joint resolution of the Senate and House of Representatives, Hon. Richard Rush, of Pennsylvania, and Gen. Joseph G. Totten, of the city of Washington, had been re-elected Regents for six years; also that the President of the Senate had re-appointed Hon. James A. Pearce and Hon. James M. Mason, Regents for the same period of time.

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The Secretary announced to the Board that, since its last meeting, three distinguished men of science, correspondents of the Institution, had deceased, namely: Prof. J. W. Bailey, Dr. E. K. Kane, and Mr. W. C. Redfield.

On this announcement Prof Bache offered a series of appropriate remarks, referring to their eminent services in the promotion of science.

Gen. Totten offered the following resolutions, which were adopted:

Resolved, That the Regents of the Smithsonian Institution have heard with regret the announcement of the death of Prof. Jacob W. Bailey, whose communications to the Smithsonian Contributions have attracted the notice and won the approval of naturalists throughout the world.

Resolved, That the Regents offer to the family of Prof. Bailey their condolence on the loss which they have sustained.

Mr. Douglas offered the following resolutions; which were adopted:

Resolved, That the Regents of the Smithsonian Institution, in common with the whole country, have heard with deep regret of the death of one of their esteemed collaborators, Dr. E. K. Kane, to whom was committed by this institution a set of philosophical instruments for the purpose of research in the polar regions, which he used, and carefully returned at the hazard of his life, with a series of observations of great value to science.

Resolved, That the Regents offer to the family of Dr. Kane, their condolence on the loss which they have sustained.

Prof. Bache offered the following resolution; which was adopted;

Resolved, That the Regents of the Smithsonian Institution have heard with regret of the decease of their valued correspondent, William C. Redfield, of New York, whose labors in meteorology have rendered his name familiar to men of science in every part of the civilized world, and offer to his family their condolence on the loss which they have sustained.

A communication from Dr. Robert Hare was read, relative to the practical construction of minute weights and measures.

On motion of Dr. Magruder; the following resolutions were adopted:

Resolved, That a copy of the communication of Dr. Hare be transmitted to the Secretary of the Treasury, with the recommendation of the Board of Regents that the instrument offered by Dr. Hare be received by the Government, and placed in the office of weights and measures.

Resolved, That the communication of Dr. Hare be inserted in the appendix to the report of the Regents to Congress.

A communication from J. A. Johnson, Esq., of Maryland, relative to an "International Geographic and Scientific Commission" was read and referred to the Executive Committee and the Secretary.

The Secretary made a communication to the Board, relative to an article which had been published by Prof. S. F. B. Morse, con-

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taining charges against his moral character and his scientific reputation.

The Chancellor made a few remarks, confirming Prof. Henry's statement as to the advice he had given him respecting this attack.

On motion of Mr. Mason, the following resolution was adopted:

Resolved, That the communication of the Secretary and accompanying documents be referred to a committee, to examine and report upon it at the next session of the Board of Regents.

Whereupon the Chancellor appointed Messrs. Mason, Pearce, Felton, and Douglas, as the committee.

The Board then adjourned *sine die*.

January 20, 1858.

In accordance with a resolution of the Board of Regents of the Smithsonian Institution, fixing the time of the beginning of their annual meeting on the third Wednesday of January of each year, the Board met this day in the Regents' room.

No quorum being present, the Board adjourned to meet on Thursday, January 28, 1858.

January 28, 1858.

A meeting of the Board of Regents was held this day at 10 a. m., in the Smithsonian Institution.

Present, Hon. John C. Breckinridge, Vice-President of the United States, Hon. J. M. Mason, Hon. S. A. Douglas, Hon. George E. Badger, Prof. A. D. Bache, Prof. C. C. Felton, Mr. Seaton, Treasurer, and the Secretary.

In the absence of the Chancellor the Vice-President was called to the chair.

The minutes of the last meeting were read and approved.

The Secretary stated that, since the last meeting of the Board, the Speaker of the House of Representatives had appointed Hon. William H. English, of Indiana, Hon. Benjamin Stanton, of Ohio, and Hon. L. J. Gartrell, of Georgia, as Regents for the term of their service as members of the House.

The Treasurer presented a statement of the receipts and expenditures during the year 1857, and also a general statement of the funds; which were referred to the Executive Committee.

The following communication was presented:

WASHINGTON, *January* 23, 1858.

GENTLEMEN: The undersigned offers for sale, and respectfully suggests to your honorable Board the propriety of purchasing, the *gallery* of *Indian portraits* now, and for some years past, in the Smithsonian Institution.

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He proposes to sell the whole collection described in the catalogue published by the institution, one hundred and fifty-two in number, for the sum of twelve thousand dollars—one-third of the same cash and the remainder at two equal annual instalments; or, if it should be preferred, one-fourth down and the residue in three equal annual instalments.

The undersigned commenced his labors in this work in 1842, and devoted the best years of his life in travelling through the region of our country peopled principally by the red man—through the wilds of Oregon and what is now Washington Territory. All of the portraits are accurate likenesses of prominent chiefs and braves, and readily recognized by men who have had intercourse with the various tribes of Indians.

Since 1852 he has cherished the hope (but has not been able to realize it) that Congress would authorize the purchase of this collection. He has, up to this time, made sacrifices—such as one believing in the merit of his own work, and whose zeal in persevering through arduous and unremitting toil to accomplish it, alone would make—to keep this collection together. He will not affect the modesty of refraining from expressing his belief that no other gallery (aside from what artistic merit the public may award it) possesses the interest, in a national point of view, that this does. Some of the chiefs represented are no longer living; and, to the little we know of their history it will be some satisfaction to add the perpetuation of their features. These were taken from life and in the character they themselves preferred to be handed down to the gaze of future generations.

The price at which he offers this collection will not more than cover the outlay in cost of material, transportation, insurance, travelling expenses, &c., and will not afford him any compensation for his time and labor. Taking, as he humbly conceives, the intrinsic value of these Indian portraits into consideration, he will receive no pecuniary profit by their disposal on the terms named.

His ardent desire that they should be preserved, as a national work, in some place at the capital of our country; his failure heretofore to induce Congress to agree to their purchase, and the more pressing reasons of *liabilities* now maturing, impel him to make this proposition. Your honorable Board are again requested to consider it and communicate your answer at as early a day as is convenient. If the purchase of the portraits is not authorized by you, he will be compelled to expose them at public auction in time to have the proceeds available by the 1st of May next.

The undersigned will take this occasion to tender his acknowledgments to the Board and Professor Henry for the use of the hall in the institution where the gallery now is, and for other courtesies, which he will always appreciate.

I am, very respectfully, your obedient servant,

J. M. STANLEY.

The Hon. BOARD OF REGENTS OF THE SMITHSONIAN INSTITUTION.

On motion, this communication was referred to a special committee, and Messrs. Felton, Douglas, and Badger were appointed.

The Secretary laid before the Board a present from Miss Contaxaki, of Greece, consisting of a volume of drawings, &c., illustrating the celebrated works of art in her own land, together with the following letters:

WASHINGTON, *November* 23, 1857.

SIR: During my last trip to the east I was charged by Miss Elizabeth B. Contaxaki, a native of the isle of Crete, with an "ornamental album," which she desired me to present, through you, to the Smithsonian Institution. In forming the work, this lady designed it as a contribution to the Universal Exhibition at Paris, in 1855, worthy of the classic renown of the ancient city of Athens. So ardent is her admiration of the United States and its institutions that she wishes it to be permanently placed in this country, and having a high appreciation of you as an American statesman, and your reputation as a classical scholar, she desired that I would request you to offer it in her name to the Smithsonian Institution.

The "Classical Bouquet," as it is entitled, consists of illustrations of the principal monuments and places in the kingdom of Greece, to which are added a few from her native isle of Crete, not yet emancipated from the Moslem yoke. These illustrations are explained by quotations from the ancient Greek authors in the original language,

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beautifully illuminated; whilst many of the pages are adorned with flowers culled from the spots which the drawings represent.

Miss Contaxaki is the sole originator and authoress of it, assisted in its execution by native artists of Greece. The beauty of the finish, and the faithfulness and accuracy of the quotations from Hesiod, Homer, Xenophon, Plato, and others, show that the present sons and daughters of the renowned ancient city of Minerva are not insensible of the glory that was once attached to her name, nor incapable of appreciating those monuments of art, science, and literature, which still survive.

Feeling assured that, as an eminent classical scholar, you will fully appreciate the worth of the Classical Bouquet, I beg to present it, through you, to the Smithsonian Institution, in her name.

With sentiments of the highest respect, I remain your obedient servant,

CHARLES S. SPENCE.

Hon. LEWIS CASS,
Secretary of State.

WASHINGTON CITY, *November* 25, 1857.

SIR: I send you herewith a splendid album, together with a letter from Mr. Spence, explanatory of the circumstances of its execution and transmission to this country. I perform the duty of presenting it to the Smithsonian Institution with great pleasure, for it is a finished specimen of taste and art, worthy of a prominent place in your interesting collection. Mr. Spence has so well described it, that any further reference to it on my part is unnecessary.

I am, dear sir, respectfully yours,

LEWIS CASS.

Prof. HENRY,
Smithsonian Institution, Washington City.

On motion, the work was referred to Professor Felton, to report a resolution expressive of the high appreciation of the gift on the part of the Board, and a letter of acknowledgement to Miss Contaxaki.

A letter was read from Sir George Simpson, expressing the desire and intention of the agents of the Hudson's Bay Company to cooperate with the Smithsonian Institution in procuring specimens of natural history, and in the prosecution of scientific researches.

The Board then adjourned to meet on Saturday, 30th instant, at 11 o'clock, a. m.

January 30, 1858.

The Board of Regents met this day in the hall of the institution, at 11 o'clock, a. m.

Present, Hon. J. C. Breckinridge, Vice-President of the United States, Hon. J. A. Pearce, Hon. J. M. Mason, Hon. S. A. Douglas, Hon. W. H. English, Professor A. D. Bache, Professor C. C. Felton, Mr. Seaton, Treasurer, and the Secretary.

The Vice-President took the chair.

The minutes were then read and approved.

The minutes of the last meeting of the "Establishment" were read for information, according to the by-laws of that body.

The Secretary stated to the Board the action of Congress at its last session, relative to the construction of cases in the Smithsonian

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building for the Government collections, and also the decision of the Attorney General respecting the law.

The Secretary then presented the annual report of the operations, expenditures, and condition of the institution during the year 1857; which was read.

The Board then visited the rooms of the building, the collections, &c., and adjourned.

April 10, 1858.

The Board of Regents met this day at 11 o'clock, a. m.

Present, Hon. J. M. Mason. Hon. S. A. Douglas, Hon. George E. Badger, Hon. Benjamin Stanton, Hon. L. J. Gartrell.

Mr. Mason was called to the chair.

The minutes were read and approved.

The report of the Building Committee for the year 1857 was read and accepted.

The report of the Executive Committee was presented, together with the estimates for the year 1858.

Communications relative to the care of the Government collections, the Wynn estate, the publications, investigations, and other operations of the institution, were read.

On motion of Mr. Badger, the Secretary was directed to have the windows and other parts of the east wing of the building put in good order.

The following report from Professor Felton was presented.

Report on the present of Miss Contaxaki.

The Secretary laid before the Board a volume received from Greece, and sent as a gift to the Smithsonian Institution, together with the letter of the Hon. Mr. Spence, late United States Minister to Constantinople, to the Secretary of State, and the letter of the Hon. Lewis Cass, the Secretary of State, to Professor Henry, the Secretary of the Institution. The volume and the correspondence were referred to Professor Felton.

The volume was transmitted from Athens, Greece, through Mr. Spence. It was designed and executed by a Greek lady of rare literary accomplishments, Miss Elizabeth B. Contaxaki, assisted by six Greek gentlemen, resident in Athens. It contains sketches of the principal ruins in that city, and views of the most famous historical places there and in other parts of Greece, correctly drawn and delicately colored, together with the passage, from the classic authors, in which the objects and places are described or referred to, translations of the passages, and extracts from English and French writers on the same subjects. The book is adorned with exquisitely drawn vignettes, and emblematic devices, and with specimens of the wild flowers which grow in the places described, carefully preserved and pressed, and attached to the leaves. The volume is bound in blue velvet, and tastefully decorated with silver. It is put in an elegantly and richly carved case, made of olive wood from the olive groves near Athens, where stood, in ancient times, the academic groves of Plato's school. The body of the case is made of the trunk of the tree, and the ornamental portions, of the root, which is of darker and richer color. This beautiful gift, therefore, combines a great variety of objects, possessing, from their associations with the loftiest achievements of Hellenic genius, a deep and singular interest, and forming a

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most appropriate memorial of the country from which European art, education, philosophy, and letters took their rise.

Miss Contaxaki, the tasteful designer of this memorial, is a native of the island of Crete. At the time of the outbreak of the Greek revolution her father was a landed proprietor there, and, in common with the great body of the Hellenic race, lost most of his property by the rapacity and tyranny of the Turks. His family was dispersed, and his daughter Elizabeth became an inmate in the family of the Rev. Dr. John H. Hill, the American missionary, who established himself in Athens at the close of the war for the benevolent and enlightened purpose of aiding the Greeks to reconstruct the shattered edifice of civilization by establishing the school, which still continues to dispense the blessings of education among the children of its first pupils in that illustrious capital. Residing with Dr. Hill for many years, and educated chiefly under his superintendence and care, Elizabeth became known to many American travellers in the East, by whom she has often been mentioned with a cordial appreciation of her accomplishments and merits. Their personal relations have naturally inspired her with a warm interest in the United States, heightened by the sympathies of the citizens of America in the regeneration of her country, and the substantial aid furnished by them to Greece in the hour of her utmost need. Recently Miss Contaxaki, after a visit to Constantinople, where she was received with distinction, has returned to her native island, which is under the government of the Pacha of Egypt, and, by her learning and ability, has succeeded in recovering, through the Moslem tribunal, a portion of her paternal estate.

The volume now presented to the Smithsonian Institution was sent to the great Paris Exhibition of 1855, where it excited much admiration, and gained a diploma for its accomplished author. She has now transmitted it for permanent deposit among the treasures of the Smithsonian Institution in the United States.

The Regents of the Institution accept the gift with great pleasure, not only on account of its rare beauty, its intrinsic value, and the many interesting associations it suggests with that famous city, called by Milton "the eye of Greece, mother of art and arms," but also as an expressive symbol of the hearty good will for the American republic, cherished by the enlightened spirit of a nation which has so honorably vindicated its right to the glories of an illustrious descent by re-establishing the institutions of freedom and learning on the soil where, in ancient times, they earliest flourished, and with unexampled splendor.

The committee recommends the adoption of the following resolutions by the Board:

Resolved, That the Regents of the Smithsonian Institution accept, with gratitude, the splendid memorial volume presented by Miss Elizabeth B. Contaxaki, and that they recognize in the beauty, taste, and art displayed in its general execution and style of its embellishment, a pleasing indication that the genius which placed the ancient Greeks at the head of the civilization of the world still survives in their descendants.

Resolved, That a copy of the above report, and of these resolutions, be transmitted, with a letter of acknowledgement from the Smithsonian Institution, to Miss Contaxaki, the accomplished donor.

On motion the report was accepted and the resolutions adopted.

The Board then adjourned.

May 19, 1858.

The Board met this day in the Vice-President's room, United States Capitol, at 9½ o'clock.

Present, the Chancellor, Hon. Roger B. Taney, Hon. John C. Breckinridge, Vice-President of the United States, Hon. James M. Mason, Hon. J. A. Pearce, Hon. S. A. Douglas, Hon. W. H. English, Hon. Benjamin Stanton, Professor A. D. Bache, and the Secretary.

The minutes were read and approved.

Mr. Pearce explained the report of the Executive Committee and

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the estimates for the year 1858; and, on motion, they were adopted.

The following report was presented from Professor Felton, of the committee to whom was referred the communication of Mr. J. M. Stanley.

Report on the proposition to purchase the Indian Gallery.

The Secretary laid before the Board a letter from Mr. J. M. Stanley, painter of the gallery of Indian portraits now on deposit with the Smithsonian Institution, proposing to sell them to the Institution for the sum of twelve thousand dollars.

The committee appointed to consider and report upon the subject respectfully represent that, while they are fully sensible of the great historical and ethnological value of this collection of portraits, and of their characteristic excellence, they are yet of opinion that it would be inexpedient to withdraw the sum mentioned from the funds necessary to carry on the scheme of active operations, which has been so ably inaugurated and, thus far, so successfully executed. The income of the Smithsonian fund should not be scattered among different and disconnected objects, and the sum necessary for the purchase of the gallery cannot be spared, without crippling for a time, at least, the regular operations of the Institution.

Among the Contributions to Knowledge several important works relating to the aboriginal inhabitants of America have been published by the institution and circulated over the civilized world.

Grammars and dictionaries of the Indian languages may be mentioned as of special interest and of great value to the science of comparative philology. Their language will probably pass away, and the races speaking them disappear; but the works to which we allude will preserve, for future investigators of the science of philology, the characteristic form in which their thoughts were expressed, and will have an important bearing, not only on general ethnological inquiries, but on the philosophy of the human mind. These volumes have been eagerly sought and studied by the most eminent comparative philologists of Europe, and have, by universal consent, contributed materially to the increase and diffusion of knowledge among men in that department of science.

But though your committee are of opinion that the purchase of this gallery would interfere with the present plan of operations, and that it would not so directly tend to the increase and diffusion of knowledge, they would earnestly express the opinion that, in a national point of view, the value of these portraits can hardly be over-estimated.

They represent forty-three different tribes, and are taken from the leading personages in them. The artist has studied carefully the peculiarities of the tribes, the characteristic expressions of the individuals, their natural attitudes and actions, their several styles of costume and ornament, and has reproduced, with artistic skill, all these particulars. To this interesting enterprise he has given ten of the best years of his life, having traversed, with great labor and inconvenience, the principal regions inhabited by the subjects of his pencil. The number of portraits, including that of the artist, enumerated in the catalogue, is one hundred and fifty-two, The price for which they are offered is much below their real value, being less than $80 a piece. At the proposed rate the artist will receive no compensation for his time and labor, and barely enough to defray the cost of material, transportation, traveling expenses, and insurance.

The number of the tribes represented so faithfully in this gallery, and the prominence of the individuals, render the collection very complete and satisfactory, as presenting a general view of the characteristic features of the red man. These circumstances make it important that the gallery should be preserved entire. Its peculiar value consists in its comprehensive character no less than in the fidelity of its individual details. Centuries hence, when most all of the tribes here represented shall have disappeared, as the New England tribes, for example, have nearly disappeared, this gallery will be an object of the profoundest interest to the student of man, the historian, the philosopher, and the statesman.

The relations between the Government of the United States and the Indian tribes form one of the most delicate and important subjects of national legislation. The Government has not only endeavored to deal with the red men in a liberal and paternal spirit, but has done much towards illustrating their character and condition by the publication of costly works embodying the observations and researches of investigators who have devoted themselves to Indian studies. It appears to your committee

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that, to purchase this collection, and to place it in some secure situation easy of access to visitors at the capital, would be an act worthy of the enlightened liberality of Congress. The cost would be insignificant, and the value of the collection would increase in all future time. No place is so suitable for its permanent deposit as the city of Washington, and no guardianship so appropriate as that of the Government of the United States.

Your committee recommend to the Board that the subject of the purchase of Mr. Stanley's Indian gallery be brought respectfully to the attention of Congress, as a measure eminently deserving a favorable consideration in its bearings upon the history of the aboriginal tribes of America, and as a monument of deep and lasting interest to the people of the United States.

The report was accepted, and laid on the table for the present.

The Secretary stated that Mr. Putnam having resigned the agency of the Smithsonian publications in New York, Messrs. D. Appleton & Co. had been appointed his successors.

The Secretary announced that since the last meeting of the Board the death of Dr. Robert Hare, of Philadelphia, had occurred, who was one of the principal benefactors of the institution, and its first honorary member.

Professor Bache gave an account of the life, character, and scientific researches of Dr. Hare, and offered the following resolutions:

Resolved, That the Regents of the Smithsonian Institution have learned with deep regret the decease of one of the earliest and most venerated honorary members of the establishment, Robert Hare, M. D., of Philadelphia, late professor of chemistry in the University of Pennsylvania.

Resolved, That the activity and power of mind of Dr. Hare, shown through a long and successful career of physical research, the great fertility of invention, the happy adaptations to matters of practical life, and the successful grappling with questions of high theory in physical science, have placed him among the first in his country of the great contributors to knowledge, *clarum et venerabile nomen*.

Resolved, That while we deplore the loss of this great and good man, who has done so much to keep alive the flame of science in our country in past days, we especially mourn the generous patron of our institution, the sympathizing friend of the youth of some of us, and the warm-hearted colleague of our manhood.

Resolved, That we offer to the bereaved family of Dr. Hare our sincere condolence in the loss which they have sustained by his death.

The resolutions were adopted.

The report of the Secretary for 1857 was then accepted.

Professor Felton, in behalf of the Special Committee, to whom the following communication of Professor Henry, of March 16th, 1857, together with accompanying documents, &c., were referred, presented a report.

Communication from Prof. Henry, Secretary of the Smithsonian Institution, relative to a publication by Prof. Morse.

GENTLEMEN: In the discharge of the important and responsible duties which devolve upon me as Secretary of the Smithsonian Institution, I have found myself exposed, like other men in public positions, to unprovoked attack and injurious misrepresentation. Many instances of this, it may be remembered, occurred about two years ago, during the discussions relative to the organic policy of the institution; but, though very unjust, they were suffered to pass unnoticed, and generally made, I presume, no lasting impression on the public mind.

During the same controversy, however, there was one attack made upon me of such a nature, so elaborately prepared and widely circulated by my opponents, that, though I have not yet publicly noticed it, I have from the first thought it my duty not to

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allow it to go unanswered. I allude to an article in a periodical entitled "Shaffner's Telegraph Companion," from the pen of Professor S. F. B. Morse, the celebrated inventor of the American electro-magnetic telegraph. In this, not my scientific reputation merely, but my moral character was pointedly assailed; indeed, nothing less was attempted than to prove that in the testimony which I had given in a case where I was at most but a reluctant witness, I had consciously and wilfully deviated from the truth, and this, too, from unworthy and dishonorable motives.

Such a charge, coming from such a quarter, appeared to me then, as it appears now, of too grave a character and too serious a consequence to be withheld from the notice of the Board of Regents. I, therefore, presented the matter unofficially to the Chancellor of the Institution, Chief Justice Taney, and was advised by him to allow the matter to rest until the then existing excitement with respect to the organization of the institution should subside, and that in the meantime the materials for a refutation of the charge might be collected and prepared, to be brought forward at the proper time, if I should think it necessary.

The article of Mr. Morse was published in 1855, but at the session of the Board in 1856 I was not prepared to present the case properly to your consideration, and I now (1857) embrace the first opportunity of bringing the subject officially to your notice, and asking from you an investigation into the justice of the charges alleged against me. And this I do most earnestly, with the desire that when we shall all have passed from this stage of being, no imputation of having attempted to evade in silence so grave a charge shall rest on *me*, nor on *you*, of having continued to devolve upon me duties of the highest responsibility, after that was known to some of you individually, which, if true, should render me entirely unworthy of your confidence. Duty to the Board of Regents, as well as regard to my own memory, to my family, and to the truth of history, demands that I should lay this matter before you, and place in your hands the documents necessary to establish the veracity of my testimony, so falsely impeached, and the integrity of my motives, so wantonly assailed.

My life, as is known to you, has been principally devoted to science, and my investigations in different branches of physics have given me some reputation in the line of original discovery. I have sought, however, no patent for inventions, and solicited no remuneration for my labors, but have freely given their results to the world, expecting only, in return, to enjoy the consciousness of having added, by my investigations, to the sum of human knowledge, and to receive the credit to which they might justly entitle me.

I commenced my scientific career about the year 1828, with a series of experiments in electricity, which were continued at intervals up to the period of my being honored by election to the office of Secretary of this Institution. The object of my researches was the advancement of science, without any special or immediate reference to its application to the wants of life or useful purposes in the arts. It is true, nevertheless, that some of my earlier investigations had an important bearing on the electro-magnetic telegraph, and brought the science to that point of development at which it was immediately applicable to Mr. Morse's particular invention.

In 1831 I published a brief account of these researches, in which I drew attention to the fact of their applicability to the telegraph; and in 1832, and subsequently, exhibited experiments illustrative of the application of the electro-magnet to the transmission of power to a distance, for producing telegraphic and other effects. The results I had published were communicated to Mr. Morse, by his scientific assistant, Dr. Gale, as will be shown on the evidence of the latter; and the facts which I had discovered were promptly applied in rendering effective the operation of his machine.

In the latter part of 1837 I became personally acquainted with Mr. Morse, and at that time, and afterwards, freely gave him information in regard to the scientific principles which had been the subject of my investigations. After his return from Europe, in 1839, our intercourse was renewed, and continued uninterrupted till 1845. In that year, Mr. Vail, a partner and assistant of Mr. Morse, published a work purporting to be a history of the telegraph, in which I conceived manifest injustice was done me. I complained of this to a mutual friend, and subsequently received an assurance from Mr. Morse that if another edition were published, all just ground of complaint should be removed. A new emission of the work, however, shortly afterwards appeared, without change in this respect, or further reference to my labors. Still I made no public complaint, and set up no claims on account of the telegraph. I was content that my published researches should remain as material for the history of science, and be pronounced upon, according to their true value, by the scientific world.

After this, a series of controversies and lawsuits having arisen between rival claimants for telegraphic patents, I was repeatedly appealed to, to act as expert and witness

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in such cases. This I uniformly declined to do, not wishing to be in any manner involved in these litigations, but was finally compelled, under legal process, to return to Boston from Maine, whither I had gone on a visit, and to give evidence on the subject. My testimony was given with the statement that I was not a willing witness, and that I labored under the disadvantage of not having access to my notes and papers, which were in Washington. That testimony, however, I now reaffirm to be true in every essential particular. It was unimpeached before the court, and exercised an influence on the final decision of the question at issue.

I was called upon on that occasion to state, not only what I had published, but what I had done, and what I had shown to others in regard to the telegraph. It was my wish, in every statement, to render Mr. Morse full and scrupulous justice. While I was constrained, therefore, to state that he had made no discoveries in science, I distinctly declared that he was entitled to the merit of combining and applying the discoveries of others, in the invention of the best practical form of the magnetic telegraph. My testimony tended to establish the fact that, though not entitled to the exclusive use of the electro-magnet for telegraphic purposes, he was entitled to his particular machine, register, alphabet, &c. As this, however, did not meet the full requirements of Mr. Morse's comprehensive claim, I could not but be aware that, while aiming to depose nothing but truth and the whole truth, and while so doing being obliged to speak of my own discoveries, and to allude to the omissions in Mr. Vail's book, I might expose myself to the possible, and, as it has proved, the actual, danger of having my motives misconstrued and my testimony misrepresented. But I can truly aver, in accordance with the statement of the counsel, Mr. Chase, (now Governor of Ohio,) that I had no desire to arrogate to myself undue merit, or to detract from the just claims of Mr. Morse.

I have the honor to be, your obedient servant,

JOSEPH HENRY.

To the Board of Regents.

The Chancellor, Chief Justice Taney, corroborated Prof. Henry's statement as to his advising a delay in noticing the publication referred to until the public mind should be more settled in regard to the policy of the institution, and the discussions which had arisen in Congress in reference to it should be ended.

He stated that it would be seen by the report of the decision of the Supreme Court, in the case in which Professor Henry was a witness, that, in the opinion of the court, Professor Morse had produced no testimony that could invalidate the testimony of Professor Henry, or impair in any degree its weight, and gave full credit to it in the judgment it pronounced.

REPORT OF THE SPECIAL COMMITTEE OF THE BOARD OF REGENTS ON THE COMMUNICATION OF PROFESSOR HENRY.

Professor Henry laid before the Board of Regents of the Smithsonian Institution a communication relative to an article in "Shaffner's Telegraph Companion," bearing the signature of Samuel F. B. Morse, the inventor of the American electro-magnetic telegraph. In this article serious charges are brought against Professor Henry, bearing upon his scientific reputation and his moral character. The whole matter having been referred to a committee of the Board, with instructions to report on the same, the committee have attended to the duty assigned to them, and now submit the following brief report, with resolutions accompanying it:

The committee have carefully examined the documents relating

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to the subject, and especially the article to which the communication of Professor Henry refers. This article occupies over ninety pages, filling an entire number of Shaffner's journal, and purports to be "a defense against the injurious deductions drawn from the deposition of Professor Joseph Henry, (in the several telegraph suits,) with a critical review of said deposition, and an examination of Professor Henry's alleged discoveries bearing upon the electro-magnetic telegraph."

The first thing which strikes the reader of this article is, that its title is a misnomer. It is simply an assault upon Professor Henry; an attempt to disparage his character; to deprive him of his honors as a scientific discoverer; to impeach his credibility as a witness and his integrity as a man. It is a disengenuous piece of sophistical argument, such as an unscrupulous advocate might employ to pervert the truth, misrepresent the facts, and misinterpret the language in which the facts belonging to the other side of the case are stated.

Mr. Morse charges that the deposition of Professor Henry "contains imputations against his (Morse's) personal character," which it does not, and assumes it as a duty "to expose the utter non-reliability of Professor Henry's testimony;" that testimony being supported by the most competent authorities, and by the history of scientific discovery. He asserts that he "is not indebted to him (Professor Henry) for any discovery in science bearing on the telegraph," he having himself acknowledged such indebtednesss in the most unequivocal manner, and the fact being independently substantiated by the testimony of Sears C. Walker, and the statement of Mr. Morse's own associate, Dr. Gale. Mr. Morse further maintains, that all discoveries bearing upon the telegraph were made, not by Professor Henry, but by others, and prior to any experiments of Professor Henry, in the science of electro-magnetism; contradicting in this proposition the facts in the history of scientific discovery perfectly established and recognized throughout the scientific world.

The essence of the charges against Professor Henry is that he gave false testimony in his deposition in the telegraph cases, and that he has claimed the credit of discoveries in the sciences bearing upon the electro-magnetic telegraph which were made by previous investigators; in other words, that he has falsely claimed what does not belong to him, but *does* belong to others.

Professor Henry, as a private man, might safely have allowed such charges to pass in silence. But standing in the important position which he occupies, as the chief executive officer of the Smith-

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sonian Institution; and regarding the charges as undoubtedly containing an impeachment of his moral character, as well as of his scientific reputation; and justly sensitive, not only for his own honor, but for the honor of the institution, he has a right to ask this Board to consider the subject, and to make their conclusions a matter of record, which may be appealed to hereafter should any question arise with regard to his conduct in the premises.

Your committee do not conceive it to be necessary to follow Mr. Morse through all the details of his elaborate attack. Fortunately, a plain statement of a few leading facts will be sufficient to place the essential points of the case in a clear light.

The deposition already referred to was reluctantly given, and under the compulsion of legal process, by Professor Henry, before the Hon. George S. Hillard, United States Commissioner, on the 7th of September, 1849.

The following is the statement of the Hon. S. P. Chase, (now Governor of Ohio,) one of the counsel in the telegraph cases, in a letter to Professor Henry, dated Columbus, Ohio, November 26th, 1856:

In the year 1849, I was professionally employed in the defense of certain gentlemen engaged in the business of telegraphing between Louisville and New Orleans, against whom a bill of complaint had been filed in the circuit court of the United States for the district of Kentucky. The object of the bill was to restrain the defendants, my clients, from the use in telegraphing of a certain instrument called the Columbian Telegraph, on the ground that it was an infringement upon the rights of the complainants under the patents granted to Professor Morse. It therefore became my duty, in the preparation of their defense, to ascertain the precise nature and extent of their rights. With this view I called upon you, in August or September of that year, for your deposition. It was taken before George S. Hillard, Esq., a United States Commissioner for the district of Massachusetts, in Boston. I remember very well that you were unwilling to be involved in the controversy, even as a witness, and that you only submitted to be examined in compliance with the requirements of law. Not one of your statements was volunteered. They were all called out by questions propounded either verbally or in writing. I was not sufficiently familiar at the time with the precise merits of the case to know what would or would not be important, and therefore insisted on a full statement, not merely of the general history of electro-magnetism as applied to telegraphing, but of all your own discoveries in that science having relation to the same art, and of all that had passed between yourself and Professor Morse connected with these discoveries or with the telegraph. You could not have refused to respond to the questions propounded, without subjecting yourself to judicial animadversion and constraint. Nothing in what you testified, or your manner of testifying, suggested to me the idea that you were animated by any desire to arrogate undue merit to yourself, or to detract from the just claims of Prof. Morse.

S. P. CHASE.

Previous to this deposition, Mr. Morse, as appears from his own letters and statements, entertained for Professor Henry the warmest feelings of personal regard, and the highest esteem for his character as a scientific man. In a letter, dated April 24, 1839, he thanks Professor Henry for a copy of his "valuable contributions," and

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says, "I perceive many things (in the contributions) of great interest to me in my telegraphic enterprise." Again, in the same letter, speaking of an intended visit to the Professor, at Princeton, he says: "I should come as a learner, and could bring no 'contributions' to your stock of experiments of any value." And still further: "I think that you have pursued an original course of experiments, and discovered facts more immediately bearing upon my invention than any that have been published abroad."

It appears, from Mr. Morse's own statement, that he had at least two interviews with Professor Henry—one in May, 1839, when he passed the afternoon and night with him, at Princeton; and another in February, 1844—both of them for the purpose of conferring with him on subjects relating to the telegraph, and evidently with the conviction, on Mr. Morse's part, that Professor Henry's investigations were of great importance to the success of the telegraph.

As late as 1846, after Mr. Morse had learned that some dissatisfaction existed in Professor Henry's mind in regard to the manner in which his researches in electricity had been passed over by Mr. Vail, an assistant of Mr. Morse, and the author of a history of the American magnetic telegraph, Mr. Morse, in an interview with Professor Henry, at Washington, said, according to his own account, "Well, Professor Henry, I will take the earliest opportunity that is afforded me in anything I may publish to have justice done to your labors; for I do not think that justice has been done you, either in Europe or this country."

Again, in 1848, when Professor Walker, of the Coast Survey, made his report on the theory of Morse's electro-magnetic telegraph, in which the expression occurred, "the helix of a soft iron magnet, prepared after the manner first pointed out by Professor Henry," Mr. Morse, to whom the report was submitted, said: "I have now the long wished for opportunity to do justice publicly to Henry's discovery bearing on the telegraph." And in a note prepared by him, and intended to be printed with Professor Walker's report, he says: "The allusion you make to the helix of a soft iron magnet, prepared after the manner first pointed out by Professor Henry, gives me an opportunity, of which I gladly avail myself, to say that I think that justice has not yet been done to Professor Henry, either in Europe or in this country, for the discovery of a scientific fact, which, in its bearing on telegraphs, whether of the magnetic needle or electro-magnet order, is of the greatest importance."

He then proceeds to give a historical synopsis, showing that, although suggestions had been made and plans devised by Soem-

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mering, in 1811, and by Ampère, in 1820, yet that the experiments of Barlow, in 1824, had led that investigator to pronounce "the idea of an electric telegraph to be chimerical"—an opinion that was, for the time, acquiesced in by scientific men. He shows that, in the interval between 1824 and 1829, no further suggestions were made on the subject of electric telegraphs. But he proceeds—"In 1830, Professor Henry, assisted by Dr. Ten Eyck, while engaged in experiments on the application of the principle of the galvanic multiplier to the development of great magnetic power in soft iron, made the important discovery that a battery of intensity overcame that resistance in a long wire which Barlow had announced as an insuperable bar to the construction of electric telegraphs. Thus was opened the way for fresh efforts in devising a practicable electric telegraph; and Baron Schilling, in 1832, and Professors Gauss and Weber, in 1833, had ample opportunity to learn of Henry's discovery, and avail themselves of it, before they constructed their needle telegraphs." And, while claiming for himself that he was "the first to propose the use of the electro-magnet for telegraphic purposes, and the first to construct a telegraph on the basis of the electro-magnet," yet he adds, "*to Professor Henry is unquestionably due the honor of the discovery of a principle which proves the practicability of exciting magnetism through a long coil, or at a distance, either to deflect a needle or to magnetize soft iron.*"

What Mr. Morse here describes as "a principle," the discovery of which is unquestionably due to Professor Henry, is the law which first made it possible to work the telegraphic machine invented by Mr. Morse, and for the knowledge of which Mr. Morse was indebted to Professor Henry, as is positively asserted by his associate, Dr. Gale. This gentleman, in a letter, dated Washington, April 7, 1856, makes the following conclusive statement:

WASHINGTON, D. C., *April* 7, 1856.

SIR: In reply to your note of the 3d instant, respecting the Morse telegraph, asking me to state definitely the condition of the invention when I first saw the apparatus in the winter of 1836, I answer: This apparatus was Morse's original instrument, usually known as the type apparatus, in which the types, set up in a composing stick, were run through a circuit breaker, and in which the battery was the cylinder battery, with a single pair of plates. This arrangement also had another peculiarity, namely, it was the electro-magnet used by Moll, and shown in drawings of the older works on that subject, having only a few turns of wire in the coil which surrounded the poles or arms of the magnet. The sparseness of the wires in the magnet coils and the use of the single cup battery were to me, on the first look at the instrument, obvious marks of defect, and I accordingly suggested to the Professor, without giving my reasons for so doing, that a battery of many pairs should be substituted for that of a single pair, and that the coil on each arm of the magnet should be increased to many hundred turns each; which experiment, if I remember aright, was made on the same day with a battery and wire on hand, furnished, I believe, by myself, and it was found that while the original arrangement would only send the electric current through a few feet of wire, say 15 to 40, the modified arrangement would send it through as many hundred. Although I gave no reasons at the time to Professor

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Morse for the suggestions I had proposed in modifying the arrangement of the machine, I did so afterwards, and referred in my explanations to the paper of Professor Henry, in the 19th volume of the "American Journal of Science," page 400 and onward. It was to these suggestions of mine that Professor Morse alludes in his testimony before the circuit court for the eastern district of Pennsylvania, in the trial of B. B. French and others *vs.* Rogers and others. See printed copy of Complainants' Evidence, page 168, beginning with the words "Early in 1836 I procured 40 feet of wire," &c., and page 169, where Professor Morse alludes to myself and compensation for services rendered to him, &c.

At the time I gave the suggestions above named, Professor Morse was not familiar with the then existing state of the science of electro-magnetism. Had he been so, or had he read and appreciated the paper of Henry, the suggestions made by me would naturally have occurred to his mind as they did to my own. But the principal part of Morse's great invention lay in the mechanical adaptation of a power to produce motion, and to increase or relax at will. It was only necessary for him to know that such a power existed, for him to adapt mechanism to direct and control it.

My suggestions were made to Professor Morse from inferences drawn by reading Professor Henry's paper above alluded to. Professor Morse professed great surprise at the contents of the paper when I showed it to him, but especially at the remarks on Dr. Barlow's results respecting telegraphing, which were new to him, and he stated at the time that he was not aware that any one had even conceived the idea of using the magnet for such purposes.

With sentiments of esteem, I remain yours truly,

L. D. GALE.

Professor JOSEPH HENRY,
Secretary of the Smithsonian Institution.

It further appears, that principally for the information thus communicated Mr. Morse assigned to Dr. Gale an interest in the telegraph, which he afterwards purchased back for $15,000, as appears from the following letter of Dr. Gale:

PATENT OFFICE, *August* 5, 1857.

DEAR SIR: In reply to yours of this date, respecting the interest I once possessed in Morse's telegraph patent, secured to me by the said Morse, as alluded to by him in his statement to the Commissioner of Patents, I would simply state that the part I owned when I entered the service of the Government in this office, was originally given me by the said Morse for services rendered him in making his invention practically effective in sending currents through long distances, &c., and that the said interest was retransferred to the said Morse for the sum of fifteen thousand dollars.

Respectfully,

L. D. GALE.

Professor HENRY,
Secretary Smithsonian Institution.

It thus appears, both from Mr. Morse's own admissions down to 1848, and from the testimony of others most familiar with the facts, that Professor Henry discovered the law, or "principle," as Mr. Morse designates it, which was necessary to make the practical working of the electro-magnetic telegraph at considerable distances possible; that Mr. Morse was first informed of this discovery by Dr. Gale; that he availed himself of it at once, and that it never occurred to Mr. Morse to deny this fact until after 1848. He had steadily and fully acknowledged the merits and genius of Mr. Henry, as the discoverer of facts and laws in science of the highest importance to the success of his long-cherished invention of a magnetic telegraph. Mr. Henry was the discoverer of a principle, Mr.

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Morse was the inventor of a machine, the object of which was to record characters at a distance, to convey intelligence, in other words, to carry into execution the idea of an electric telegraph. But there were obstacles in the way which he could not overcome until he learned of the discoveries of Professor Henry, and applied them to his machine. These facts are undeniable. They constitute a part of the history of science and invention. They were true in 1848, they were equally true in 1855, when Professor Morse's article was published. We give a passage here from the deposition of Sears C. Walker, in the case of French *vs.* Rogers, respondent's evidence, page 199, bearing upon this whole subject:

"In consequence of some statements made by me in my official reports relative to the invention of the receiving magnet, a question arose between Mr. Morse and myself as to the origin of this invention. It was amicably discussed by Mr. Morse, Professor Henry, Dr. Gale, and myself, with Professor Henry's article, alluded to in answer to the second question before us. The result of the interview was conclusive to my mind that Professor Henry was the sole discoverer of the law on which the intensity magnet depends for its power of sending the galvanic current through a long circuit. I was also led to conclude that Mr. Morse, in the course of his own researches and experiments before he had read Professor Henry's article, before alluded to, had encountered the same difficulty Mr. Barlow and those who preceded him had encountered, that is, the impossibility of forcing the galvanic current through a long telegraph line. His own personal researches had not overcome this obstacle. They were made in the laboratory of the New York University. I also learned at the same time, by the conversations above stated, that he only overcame this obstacle by constructing a magnet on the principle invented by Professor Henry, and described in his article in Silliman's Journal. His attention was directed to it by Dr. Gale."

What changed Mr. Morse's opinion of Professor Henry, not only as a scientific investigator, but as a man of integrity, after the admissions of his indebtedness to his researches, and the oft repeated expressions of warm personal regard? It appears that Mr. Morse was involved in a number of lawsuits, growing out of contested claims to the right of using electricity for telegraphic purposes. The circumstances under which Professor Henry, as a well known investigator in this department of physics, was summoned by one of the parties to testify have already been stated. The testimony of Mr. Henry, while supporting the claims of Mr. Morse as the inventor of an admirable invention, denied to him the additional merit of being a discoverer of new facts or laws of nature, and to this extent, perhaps, was considered unfavorable to some part of the claim of Mr. Morse to an *exclusive* right to employ the electro-magnet for telegraphic purposes. Professor Henry's deposition consists of a series of answers to verbal, as well as written, interrogatories propounded to him, which were not limited to his published writings, or the subject of electricity, but extended to investigations and discoveries in general having a bearing upon the electric telegraph. He gave his testimony at a distance from his notes and manuscripts,

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and it would not have been surprising if inaccuracies had occurred in some parts of his statement; but all the material points in it are sustained by independent testimony, and that portion which relates directly to Mr. Morse agrees entirely with the statement of his own assistant, Dr. Gale. Had his deposition been objectionable, it ought to have been impeached before the court; but this was not attempted; and the following tribute to Professor Henry by the judge, in delivering the opinion of the Supreme Court of the United States, indicates the impression made upon the court itself by all the testimony in the case: "It is due to him to say that no one has contributed more to enlarge the knowledge of electro-magnetism, and to lay the foundations of the great invention of which we are speaking, than the professor himself."

Professor Henry's answers to the first and second interrogatories present a condensed history of the progress of the science of electro-magnetism, as connected with telegraphic communication, embracing an account of the discoveries of Oersted, Arago, Davy, Ampère; of the investigations by Barlow and Sturgeon; of his own researches, commenced in 1828, and continued in 1829, 1830, and subsequently. The details of his experiments and their results, though brief, are very precise. There is abundant evidence to show that Professor Henry's experiments and illustrations at Albany, and subsequently at Princeton, proved, and were declared at the time by him to prove, that the electric telegraph was now practicable; that the electro-magnet might be used to produce mechanical effects at a distance adequate to making signals of various kinds, such as ringing bells, which he practically illustrated. In proof of this, we quote a letter to Professor Henry, from Professor James Hall, of Albany, late president of the American Association for the Advancement of Science.

January 19, 1856.

DEAR SIR: While a student of the Rensselaer School, in Troy, New York, in August, 1832, I visited Albany with a friend, having a letter of introduction to you from Professor Eaton. Our principal object was to see your electro-magnetic apparatus, of which we had heard much, and at the same time the library and collections of the Albany Institute.

You showed us your laboratory in a lower story or basement of the building, and in a larger room in an upper story some electric and galvanic apparatus, with various philosophical instruments. In this room, and extending around the same, was a circuit of wire stretched along the wall, and at one termination of this, in the recess of a window, a bell was fixed, while the other extremity was connected with a galvanic apparatus.

You showed us the manner in which the bell could be made to ring by a current of electricity, transmitted through this wire, and you remarked that this method might be adopted for giving signals, by the ringing of a bell at the distance of many miles from the point of its connection with the galvanic apparatus.

All the circumstances attending this visit to Albany are fresh in my recollection, and during the past years while so much has been said respecting the invention of

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electric telegraphs, I have often had occasion to mention the exhibition of your electric telegraph in the Albany Academy, in 1832.

If at any time or under any circumstances this statement can be of service to you in substantiating your claim to such a discovery at the period named, you are at liberty to use it in any manner you please, and I shall be ready at all times to repeat and sustain what I have here stated, with many other attendant circumstances, should they prove of any importance.

I remain very sincerely and respectfully yours,

JAMES HALL.

Professor JOSEPH HENRY.

In his deposition, Professor Henry's statements are within what he might fairly have claimed. But he is a man of science, looking for no other reward than the consciousness of having done something for its promotion, and the reputation which the successful prosecution of scientific investigations and discoveries may justly be expected to give. In his public lectures and published writings he has often pointed out incidentally the possibility of applying the facts and laws of nature discovered by him to practical purposes; he has freely communicated information to those who have sought it from him, among whom has been Mr. Morse himself, as appears by his own acknowledgments. But he has never applied his scientific discoveries to practical ends for his own pecuniary benefit. It was natural, therefore, that he should feel a repugnance to taking any part in the litigation between rival inventors, and it was inevitable that, when forced to give his testimony, he should distinctly point out what was so clear in his own mind and is so fundamental a fact in the history of human progress, the distinctive functions of the discoverer and the inventor who applies discoveries to practical purposes in the business of life.

Mr. Henry has always done full justice to the invention of Mr. Morse. While he could not sanction the claim of Mr. Morse to the *exclusive* use of the electro-magnet, he has given him full credit for the mechanical contrivances adapted to the application of his invention. In proof of this we refer to his deposition, and present also the following statement of Hon. Charles Mason, Commissioner of Patents, taken from a letter addressed by him to Professor Henry, dated March 31, 1856:

U. S. PATENT OFFICE, *March* 31, 1856.

SIR: Agreeably to your request I now make the following statement:

Some two years since, when an application was made for an extension of Professor Morse's patent, I was for some time in doubt as to the propriety of making that extension. Under these circumstances I consulted with several persons, and among others with yourself, with a view particularly to ascertain the amount of invention fairly due to Professor Morse.

The result of my inquiries was such as to induce me to grant the extension. I will further say that this was in accordance with your express recommendation, and that I was probably more influenced by this recommendation, and the information I obtained from you, than by any other circumstance, in coming to that conclusion.

I am, sir, yours very respectfully,

CHARLES MASON.

Professor J. HENRY.

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To sum up the results of the preceding investigation in a few words, we have shown that Mr. Morse himself has acknowledged the value of the discoveries of Professor Henry to his electric telegraph; that his associate and scientific assistant, Dr. Gale, has distinctly affirmed that these discoveries were applied to his telegraph, and that previous to such application it was impossible for Mr. Morse to operate his instrument at a distance; that Professor Henry's experiments were witnessed by Professor Hall and others in 1832, and that these experiments showed the possibility of transmitting to a distance a force capable of producing mechanical effects adequate to making telegraphic signals; that Mr. Henry's deposition of 1849, which evidently furnished the motive for Mr. Morse's attack upon him, is strictly correct in all the historical details, and that, so far as it relates to Mr. Henry's own claim as a discoverer, is within what he might have claimed with entire justice; that he gave the deposition reluctantly, and in no spirit of hostility to Mr. Morse; that on that and other occasions he fully admitted the merit of Mr. Morse as an inventor; and that Mr. Morse's patent was extended through the influence of the favorable opinion expressed by Professor Henry.

Your committee come unhesitatingly to the conclusion that Mr. Morse has failed to substantiate any one of the charges he has made against Professor Henry, although the burden of proof lay upon him; and that all the evidence, including the unbiased admissions of Mr. Morse himself, is on the other side. Mr. Morse's charges not only remain unproved but they are positively disproved.

Your committee recommend the adoption of the following resolutions:

Resolved, That Professor Morse has not succeeded in refuting the statements of Professor Henry in the deposition given by the latter in 1849; that he has not proved any one of the accusations against Professor Henry made in the article in "Shaffner's Telegraph Companion" in 1855, and that he has not disproved any one of his own admissions in regard to Professor Henry's discoveries in electro-magnetism, and their importance to his own invention of the electro-magnetic telegraph.

Resolved, That there is nothing in Professor Morse's article that diminishes, in the least, the confidence of this Board in the integrity of Professor Henry, or in the value of those great discoveries which have placed his name among those of the most distinguished cultivators of science, and have done much to exalt the scientific reputation of the country.

Resolved, That this report, with the resolutions, be recorded in the proceedings of the Board of Regents of the Institution.

The report was accepted, and the resolutions were unanimously adopted.

The Board then adjourned *sine die*.

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January 19, 1859.

In accordance with a resolution of the Board of Regents of the Smithsonian Institution, fixing the time of the beginning of their annual meeting on the third Wednesday of January of each year, the Board met this day in the Regents' room.

Present, Hon. S. A. Douglas, Hon. William H. English, Hon. James G. Berret, Professor A. D. Bache, Hon. W. W. Seaton, Treasurer, and the Secretary.

The Secretary stated that letters had been received from Hon. Richard Rush, Hon. Gideon Hawley, and Professor C. C. Felton, stating their inability to attend the present annual session of the Board of Regents.

The Treasurer presented a statement of the receipts and expenditures during the year 1858, and also a general statement of the funds; which were referred to the Executive Committee.

A quorum not being present, the Board adjourned to meet at the call of the Secretary.

February 15, 1859.

A meeting of the Board of Regents of the Smithsonian Institution, was held this day at 11 a. m., in the Vice-President's room, United States Capitol.

Present, Hon. John C. Breckinridge, Hon. James M. Mason, Hon. James A. Pearce, Hon. S. A. Douglas, Hon. William H. English, Hon. L. J. Gartrell, Hon. J. G. Berret, Professor A. D. Bache, and the Secretary.

Mr. Pearce was called to the chair.

The report of the Executive Committee was presented, read and accepted.

The Secretary announced the re-election by joint resolution of the Senate and House of Representatives of the United States, of Professor Alexander Dallas Bache and Hon. George E. Badger, as Regents of the Smithsonian Institution, for the term of six years.

The Secretary then presented the annual report of the operations of the institution, for 1858, which was accepted.

The report of the Executive Committee, presented by Mr. Pearce, was read and accepted.

The following letter was read to the Board:

BREMEN LEGATION,
WASHINGTON, *January* 25, 1859.

SIR: Agreeably to your verbal request, I have proposed to the president and directors of the North German Lloyd of Bremen, to manifest their interest in the cause of science, by facilitating literary intercourse between the United States and Germany, by means of their steamers plying between Bremen and New York.

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It affords me great pleasure now to inform you that, according to a letter of the president of the Lloyd, dated the 5th instant, and just received, the said Bremen Steamship Company have resolved, henceforth, and until further notice, to forward by their steamers all the packages of books and specimens of natural history which the Smithsonian Institution may be pleased to send to Germany, or which may be sent from Germany to the Smithsonian Institution, *free of charges between New, York and Bremerhaven.*

I beg leave to add that Messrs. Gelpcke, Keutgen and Reichelt, 84 Broadway, New York, are the agents of the North German Lloyd at that place, and that the next Bremen steamer sailing for Europe will leave New York on the 19th of February next.

I avail myself of this occasion to offer you renewed assurances of my high consideration.

R. SCHLEIDEN,
Minister Resident of Bremen.

Professor JOSEPH HENRY,
Secretary of the Smithsonian Institution.

On motion of Mr. Mason, the following resolution was adopted by the Board:

Resolved, That the thanks of this Board be returned to his excellency, R. Schleiden, minister resident of Bremen, for his intervention with the "North German Lloyd of Bremen" to facilitate and advance the cause of science by transporting, free of charge, &c., packages of books, and specimens of natural history, from Germany to the Smithsonian Institution, and from the institution to Germany, and the like thanks to the president and directors of the North German Lloyd of Bremen, for their generous liberality in the instance above referred to.

The Secretary stated that thanks were due to several companies for their liberality to Lieutenant Gilliss, who had visited South America, in September last, to make observations of the eclipse, under the auspices of the Smithsonian Institution.

On motion of Mr. Mason, the following resolution was adopted:

Resolved, That the thanks of the Board of Regents are hereby given to the British Pacific Steamship Navigation Company; the United States Mail Steamship Company; the Pacific Mail Steamship Company; and the Panama Railroad Company, for their generous aid in the cause of science, by transporting, free of charge, with other facilities extended to Lieutenant Gilliss, U. S. N., in his late expedition to Peru, under the auspices of the Smithsonian Institution, to observe in that country the total solar eclipse of September 7th, 1858.

Communications were read from Rev. F. Vinton, of Brooklyn, relative to the Wynn estate, of which he is one of the two executors; from Hon. J. H. Hammond, and J. R. Lambdin, Esq., relative to procuring copies of celebrated works of art in Europe.

On motion of Mr. Douglas, the following resolution was adopted:

Resolved, That the sum of two thousand dollars be appropriated, to be expended at the discretion of the Executive Committee, for procuring castings or moulds for castings of the *chef d'œuvres* of art in Europe.

A communication from Professor S. F. Baird, asking an increase of salary, was read, and referred to the Executive Committee.

A communication from Professor S. F. B. Morse, dated Paris, October 16, 1858, and a letter from Hon. Amos Kendall, were presented to the Board, and both were referred to the Special Committee.

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which had made a report in relation to the telegraph at the meeting of May 19, 1858.

The following communication was presented:

18 ASHLEY PLACE,
LONDON, *January* 8, 1859.

MY DEAR SIR: I sent you from Leeds, in September, a printed copy of the report of the joint committee of the Royal Society and the British Association, on the subject of the continuance of magnetic observations drawn up by Sir John Herschel. You will have been apprised by it of the serious purpose entertained in this country to prosecute the magnetic researches which have already, though quite in their infancy, established so many important laws. The minutes of the last meeting of the council of the British Association, will make you acquainted with our subsequent proceedings.

Our government has postponed the decision of the precise measures to be taken until next year; and indeed our preparations, both of instruments and observers, could scarcely have been ready earlier, but I think that we may entertain very sanguine hopes of establishing some observatories at least; and I have the more confident expectation of this from the letter of the Prince Consort of December 11th, (which you will see in the enclosed minutes,) who is to be our president next year, (at the B. A.,) and who will then be the medium of our communications with government. But still we may derive great support from any evidence which we may be able to adduce that other countries besides our own participate in the scientific interest of these researches, and it is specially in this view that I now write to you.

Our government appears not indisposed to have an observatory at Pekin, and we shall no doubt press strongly to have a second at Vancouver's Island. Toronto is already a third observatory in action in nearly the same latitude, and London a fourth. It is obvious that a chain of stations at moderate distances from each other in the middle latitudes of the one hemisphere would give us a very reasonable prospect of establishing with confidence laws the existence of which we can now only infer. The greatest interval is between London and Pekin, but this, I have some reason to hope, may be supplied by an observatory at Kazan, under the able direction of Professor Bolzani, and it is impossible under these circumstances not to desire that the observatory which you have so long meditated at Washington, should be brought into corresponding activity.

It is purposed that the instruments for the new British observatories should serve either for eye observations or for a continuous record of the three elements. They will be in great measure on the model of the self-recording instruments at Kew, which have now been at work for a twelvemonth, and which seem indeed to leave little to be desired. But those for the colonial observatories will be somewhat differently arranged, so as to occupy a space not exceeding, perhaps, twelve feet by six, and to have all their parts so attached to a solid floor that nothing is capable of misplacement. We find at Kew that two persons are sufficient for the manipulations of such an observatory, the preparation of the paper, &c., and the tabulation from the traces by instrumental measurement at hourly intervals.

The instruments for the first either colonial or extra English observatory are in hand, and will be at work we expect in a temporary building in the grounds of the observatory at Kew, in July or August next, where, should you incline to come once more to our British Association meeting, which is to be held this year at Aberdeen, under the Prince Consort, or should any friend do so in whose judgment you can confide, there will be a full opportunity for examining them.

I cannot conclude this letter without again adverting to the support which we should derive in our communications with our government in the event of the Smithsonian Institution concurring with us in the importance of prosecuting these inquiries, and being disposed to adopt corresponding proceedings with, of course, such modifications as may suit either their convenience or their views of the subject.

Believe me, my dear sir, sincerely yours,

EDWARD SABINE.

Professor HENRY.

The above communication was referred to the Secretary and Executive Committee.

The Secretary presented a communication from G. J. Durand, of

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Bordeaux, accompanied by a report on the history, operations, and publications of the Smithsonian Institution, which that gentleman had presented to the Imperial Academy of Bordeaux.

The Board then adjourned *sine die*.

January 18, 1860.

In accordance with a resolution of the Board of Regents of the Smithsonian Institution fixing the time of the beginning of their annual session on the third Wednesday of January of each year, the Board met this day in the Regents' room of the institution.

Present, Hon. James A. Pearce, Hon. W. H. English, and the Secretary.

No quorum being present, the Board adjourned to meet on the 28th of January.

January 28, 1860.

The Board of Regents met this day, at 10½ o'clock, a. m., in the Regents' room.

Present, Hon. Mr. Breckinridge, Hon. James A. Pearce, Hon. J. M. Mason, Professor C. C. Felton, Professor A. D. Bache, Hon. J. G. Berret, W. W. Seaton, Esq., Treasurer, and the Secretary.

The Secretary announced the reappointment, by the Vice-President, under a resolution of the Senate, of the Hon. S. A. Douglas, as a Regent for the term of six years, and stated that the House of Representatives not having organized, the vacancies in the Board from that body had not been filled. He regretted to state that the Chancellor of the Institution, Chief Justice Taney, was confined to his bed by temporary illness; that Mr. Hawley, of Albany, was unable to attend on account of bad health, and that since the last meeting of the Regents a vacancy had occurred in the Board by the death of the Hon. Richard Rush, of Philadelphia.

Hon. Mr. Pearce then made the following remarks:

Since the last meeting of the Board of Regents, as announced by the Secretary, one of its earliest and most distinguished members, the Hon. Richard Rush, has departed this life.

The history of his public career is familiar to all the Regents, to whom I need scarcely detail even its more prominent incidents; but I may remark that it is seldom the good fortune of any man to fill so many important offices, and to execute so many responsible public trusts, not only with credit, honor, and usefulness, but with ever-increasing reputation. Mr. Rush's life was a long one, and he entered into the service of his country while yet in the spring of manhood. He was Comptroller of the Treasury at a time when the fiscal affairs of the Government were in disorder, when the public accounts were numerous and complicated, and often required difficult legal adjustment. He was next Attorney General. Soon after the peace of 1815 he was minister to England, and occupied that important post during eight years, when various national questions of difficulty and delicacy required for their proper settlement diplomatic skill, firmness, and caution. He was Secretary of the Treasury

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when measures of revenue were violently disputed; minister to France when the monarchy was a second time overthrown and a republic again proclaimed. To these great and varied employments he brought integrity, ability, intelligence, firmness, courtesy, and a directness of purpose which scorned all finesse, and which served his country to the full extent of all that could have been demanded or hoped. He was a good scholar, having graduated at Princeton College, and cultivated literature, as well as the severer studies of his profession, with great zeal and success.

Withal he was remarkable for the kindness of his temper, the amenity of his manners, and the charms of his conversation.

With this establishment he had the earliest connection, having, under the authority of the Government, caused the institution of legal proceedings in England for the recovery of the fund with which it was founded and endowed, and superintended their progress to the close.

The act of Congress of 1846 having established the Smithsonian Institution, he was appointed one of its first Regents, and was constantly continued by Congress a member of their Board. His zeal for the increase and diffusion of knowledge among men, and his sound judgment, contributed to the adoption of the system of operations which, so far, has borne the happiest fruits; and his interest in and care for its successful management furnished one of the enjoyments of a tranquil old age, "attended by reverence and troops of friends."

I offer the following resolutions:

Resolved, That the Board of Regents have learned with deep regret the death of the Hon. Richard Rush, one of their members, whose long and distinguished career of public usefulness commanded their entire respect, and whose moral and social worth won their highest esteem and regard.

Resolved, That a copy of this resolution be transmitted to the family of the deceased.

The resolutions were unanimously adopted.

On motion of Mr. Mason, it was ordered that a copy of the remarks of Mr. Pearce be included in the proceedings, and also transmitted to the family.

The Treasurer presented the account of receipts and expenditures for the year 1859, and a general statement of the finances, which were read and referred to the Executive Committee.

The Secretary read the following letter from the Duke of Northumberland, and presented the books to which it refers:

NORTHUMBERLAND HOUSE, *July* 4, 1859.

SIR: Permit me to present to the Smithsonian Institution some books which I have had privately printed as materials for the history of the county of Northumberland. There is a survey of the Roman wall which was built across the North of England; coins of the Roman families, some of which were found in this country; and an account of some ancient castles which have historical interest.

I again beg to express my thanks to the members of the Smithsonian Institution for the valuable publications which they have had the kindness to send me.

I am, sir, your obedient servant,

NORTHUMBERLAND.

The Secretary exhibited a burning lens and a condensing air-pump, which had been presented to the institution by J. R. Priestley, Esq., of Northumberland, Pa., a grandson of the celebrated Dr. Priestley, and made the following remarks:

This lens is undoubtedly connected with the history of one of the most important chemical discoveries of the latter part of the last century. Dr. Priestley, who has been styled the father of pneumatic chemistry, made a series of experiments on different kinds of air, which greatly extended the science of chemistry, and has been of material importance in the improvement of various practical arts.

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"At the time of my first publication," says Dr. Priestley,* "I was not possessed of a burning lens of any considerable force, and for want of one I could not possibly make many of the experiments which I had projected, and which in theory appeared very promising. But having afterwards procured a lens of *twelve* inches diameter and *twenty* inches focal distance, I proceeded with great alacrity to examine by the help of it what kind of air a great variety of substances, natural and factitious, would yield, putting them into glass vessels, which I filled with quicksilver, and kept them inverted in a basin of the same. With this apparatus, after a variety of other experiments, on the first of August, 1774, I endeavored to extract air from *mercurius calcinatus per se*, and I presently found that by means of this lens air was expelled from it very readily. Having got three or four times as much (air) as the bulk of my materials, I admitted water to it, and found that it was not imbibed by it. But what surprised me more than I can well express was, that a candle burned in this air with a remarkably vigorous flame."

The gas thus discovered, to which he gave the name of "dephlogisticated air," was what is now known as oxygen.

Dr. Priestley, however, though he made a large number of experiments in regard to it, remained in ignorance of its true nature until March, 1775; but in the course of this month, says he, "I not only ascertained the nature of this kind of air, though very gradually, but was led by it, as I then thought, to the complete discovery of the constitution of the air we breathe."

That the lens now exhibited to the Board is the one with which this important discovery was made, cannot be doubted, since, according to the statement of his grandson, it has never been out of the family—is *twelve* inches diameter, and has a focal length of precisely *twenty* inches.

The annual report of the operations and condition of the Institution was presented by the Secretary, and read in part.

On motion of Mr. Pearce, the Board then adjourned to meet on Saturday next, at 10 o'clock.

February 4, 1860.

A meeting of the Board of Regents was held this day, at 10 o'clock, a. m.

Present, Hon. John C. Breckinridge, Hon. James A. Pearce, Hon. S. A. Douglas, Professor C. C. Felton, Professor A. D. Bache, Hon. J. G. Berret, and the Secretary.

Mr. Breckinridge was called to the chair.

The minutes were read and approved.

The Secretary announced the death of the following persons who had been connected officially and otherwise with the operations of the institution: Washington Irving, an honorary member; Professor Parker Cleaveland, also an honorary member; Professor W. W. Turner, Professor James P. Espy, and G. Würdemann, Esq.

Professor Felton, then addressed the Board as follows:

Mr. CHANCELLOR: The year 1859 will be memorable in the history of civilization for the number of illustrious men who have passed away from the scene of their earthly labor in its course. The year 1769 was remarkable for the number of men born in it, who have changed the whole aspect of science and letters and the political condition of the world. Of the great men born in that year, one, Humboldt, the most eminent of all, lived to the year 1859, thus spanning over the interval between them by a life of ninety years consecrated to the highest objects of human pursuits.

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*Experiments and observations on different kinds of air, &c., by Joseph Priestley, vol. ii, pp. 106–112. Birmingham, 1790.

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The Smithsonian Institution has to lament an unusual number of those connected with it among the distinguished dead of the past year. The venerable Mr. Rush has already been fitly commemorated by a member of the Board. I take the liberty of offering a few remarks upon two others whose death the country deplores.

Professor W. W. Turner was born in England, in 1810. At the age of five years he was brought by his father to the United States. The fortunes of his family being humble, he learned the trade of a carpenter; but at the age of nineteen he became a printer. During his youth and early manhood he exhibited an ardent love of knowledge, and devoted every moment he could spare from the necessary labors of his trade to its acquisition. His taste led him especially to the study of philology, and his acquisitions in this department of knowledge were surprising. He studied not only the ancient languages, including the Hebrew, Chaldee, Syriac, Samaritan, Coptic, and Sanscrit, but the modern European and Oriental tongues. To these rich and varied accomplishments he added an extensive knowledge of the dialects of the American aborigines, which form a group so peculiar in their characteristics, and so important in their bearings upon comparative philology. But Mr. Turner possessed not merely the talent of learning languages. His mind was of a philosophical cast; he mastered easily and rapidly the general principles of the science of comparative philology, which has become within the present age one of the surest guides in tracing the history and affinities of the different branches of the human race. This science but few men of his age have so thoroughly explored as our departed friend.

In 1842 Mr. Turner was elected professor of Oriental literature in the Union Theological Seminary of the city of New York. The duties of this office he discharged with signal ability for ten years. In 1852 the Commissioner of Patents invited him to Washington to take charge of the library in that department. His labors in forming a library for the special use of the department and adequate to its wants have been highly appreciated by those who knew them best.

His literary activity has been various and effective. He assisted the learned Dr. Nordheimer in the preparation of his Hebrew grammar. He executed the greater part of the translation of Freund's Latin Lexicon from the German for the American edition. He wrote many valuable papers for the "Bibliotheca Sacra" and other kindred periodical publications. A few years ago an inscription was found near the ancient Sidon, cut on the lid of the sarcophagus of an ancient king of that city, and copies of it having been transmitted to this country by the American missionaries, it attracted the earnest attention of Oriental scholars, and among the rest, of Professor Turner. The discovery was important, because the inscription contains the longest continuous text yet known in the Phenician language: a language closely connected with the Hebrew. The labors of Professor Turner upon this curious document were among the last of his life.

Two of the principal philological works published by the Smithsonian Institution were moulded into their present shape by Professor Turner; the Dakota grammar and dictionary, and the grammar of the Yoruba language. The materials furnished him were elaborated with great skill and learning; and these two admirable volumes form an interesting addition to philological science—the Dakota grammar illustrating in a philosophical manner the characteristic peculiarities of the American type of the agglutinating or polysynthetic languages, and the Yoruba grammar illustrating the African type of the same great division in the classification of human speech.

The unremitting labors of Professor Turner gradually undermined his constitution. In October last he visited New York, partly for the benefit of his impaired health, and partly to attend a meeting of the American Oriental Society, of which he was an active member. On his return to Washington, in November, he rapidly declined, and on Tuesday, the 29th of that month, expired, without pain, at the age of 49 years.

Professor Turner was not only distinguished for his abilities as a scholar, his extraordinary capacity for labor, his great power of grasping the generalization of the science to which he was devoted, but his private life was marked by singular purity. His manners were simple and cordial; his conversation lively and instructive. He was modest, without reserve; he was unobtrusive, but always ready to impart his affluent knowledge whenever the occasion seemed to call for it. The death of such a man is a loss to science and the country. I move the adoption of the following resolution:

Resolved, That this Board have learned with deep regret of the death of Professor W. W. Turner, a scholar of rare gifts and large acquirements, whose abilities and learning have in many ways been of great value to the Smithsonian Institution. As a philologist, he had but few equals; as an earnest laborer in the pursuit of knowledge, he was a high example to American students. As a public officer, he was upright, conscientious, and prompt in the discharge of every duty. His social virtues

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endeared him to his friends in no common measure. By his death American scholarship has sustained a heavy loss, this institution has been deprived of an efficient collaborator, and the community at large of a virtuous and distinguished citizen.

On motion of Hon. J. G. Berret, it was—

Resolved, That a copy of this resolution, with the introductory remarks, be transmitted to the family of the deceased.

The resolutions were adopted.

Professor Felton then addressed the Board as follows:

I have also, Mr. Chancellor, to call the attention of the Board to the death of an honorary member of the Smithsonian Institution—the beloved and illustrious Washington Irving, the most venerated representative of American literature. He was born April 3, 1783, in New York, and died at his residence, at Sunnyside, on the banks of the Hudson, November 28, 1859, in the 77th year of his age. His literary career extends over a period of more than half a century. For many years he has stood undoubtedly at the head of American literature. He enjoyed only the common opportunities of education in his youth; but the oldest universities of England and America honored themselves by conferring their highest honors on him in his manhood. At an early age he commenced the study of the law. His health failing, he travelled two years in Europe, and resuming his professional studies on his return, was admitted to the bar. Not finding the practice of the profession congenial to his tastes, he relinquished it, and became a partner in a mercantile house with his brother. But he was not destined to remain long in the career of trade; the failure of the house in the crisis that followed the peace of 1815 turned his attention to literature as a permanent pursuit. He had already shown by the most decided proofs that nature had endowed him with the richest gifts of genius. His early writings, especially his contributions to Salmagundi, and Knickerbocker's History of New York, exhibit the keenest power of observation, the most brilliant wit, and an English style at once pure, copious, and expressive. But when he resolved to devote himself to letters as the business of his life, instead of the amusement of his leisure hours, he gave to the culture of style the thought, care, and labor, that the painter and the sculptor expend in acquiring a mastery over the materials, principles, and processes of their respective arts. In the choice of his words and the structure of his sentences he exercised a refined taste and a delicate discrimination, allowing nothing to escape him which was not justified by the most fastidious judgment. He studied the best authors of the best ages in English literature, and disciplined his genius by a strict conformity to the established idiom of the mother tongue. Oddity and extravagance of expression, which some writers of our age mistake for originality of genius, found no favor with him. His genial nature, his sensibility to all that is beautiful in the works of God, his ready sympathy with the best affections of the human heart, were thus embodied in a style of marvellous grace, purity, and harmony. His imagination gentle, yet powerful, brightened everything it fell upon; his wit exhilarated and gladdened; his humor charmed by its sparkling play; his pathos, so true, so tender, colored with the unforgotten sorrow of his own early bereavement, touched the chords of sympathy in every heart. He was an elegant essayist, a delightful biographer, a profound and brilliant historian, and his whole life was loyal to the highest interests of humanity. In private friendships he was faithful and generous. He had all the excellencies of the literary character, with none of its defects. He had no rivalries to disturb the serenity of his days, no jealousies to irritate his temper. While enjoying his own brilliant success, with a modest appreciation of its value, he rejoiced in the successes of others, and delighted to aid them with his powerful influence. He never had an enemy, for all men were his friends. He never uttered a word that could wound the feelings of the most sensitive; he never wrote a sentence that could offend the most delicate; he never printed a line which, dying, he could wish to blot. His genius has been recognized throughout the civilized world; his works are read and his name revered wherever a cultivated language has been the organ of a national literature. The legends of Spain and Italy have furnished congenial subjects for his pen. The manners and life of England have been more brilliantly illustrated by him than by any English writer of our time. His native land, however, has been crowned by the richer and maturer products of his genius. The picturesque banks of the Hudson have been made classical by the charm with which his creations—poetical in all but the form—have invested them. It is his peculiar felicity to have built the most endur-

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ing monument to the discoverer of America and to the father of his country, with the latter of whom he was associated by his baptismal name.

Mr. Irving took a lively interest in all that concerned the intellectual progress of the country; in all that concerned humanity, beyond the circle of his own literary interests. He was the first named trustee of the Astor Library under the will of its munificent founder, and for many years acted as the president of the Board. He served as a director in the Savings Bank in the place of his residence until his death; and he was an officer of the village church, from which his own lifeless remains were borne to their final resting place by his mother's side. He had the prospects of this institution much at heart, and gave his constant attendance to its proceedings during a whole season passed by him in Washington. Ripe in age, crowned with the most enduring honors of the world and with the warmest affections of his countrymen, having finished the work which was given him to do and laid aside his pen forever, after a short period of repose in the midst of his friends, at the close of an evening of social and domestic enjoyment, he passed away in a moment by a blessed euthanasia. We cannot be surprised at such an event, though it excites our sensibility. His death was in beautiful harmony with his life, for he died as he had lived, the beloved of men and the favored of heaven.

Thinking thus, Mr. Chancellor, of Mr. Irving's life, character, and death, I offer the following resolutions:

Resolved, That the Board of Regents of the Smithsonian Institution recognize in the character of their late associate, Washington Irving, a conspicuous example of the noblest virtues and the most generous qualities that belong to human nature.

Resolved, That while lamenting his death with the peculiar sorrow of countrymen and associates in this institution, yet, in common with the whole civilized world, they gratefully appreciate the services he has rendered to literature, and, hold in reverent remembrance his long career of labors as an author no less loyal to truth and virtue than brilliant with the gift of genius and graced with the amenities and courtesies that are the fairest ornaments of social life.

On motion of Senator Douglas, it was—

Resolved, That a copy of the above resolutions, together with the remarks that preceded them, be transmitted to the family of the deceased.

The resolutions were then adopted.

Professor Bache made the following remarks:

James P. Espy, one of the most original and successful meteorologists of the present time, died in Cincinnati, Ohio, on the 24th of January, 1860, in the seventy-fifth year of his age, after an illness of a week, at the residence of his nephew, John Westcott.

The early career of Mr. Espy as an instructor was marked by the qualities which led to his later distinction in science. He was one of the best classical and mathematical instructors in Philadelphia, which at that day numbered Dr. Wylie, Mr. Sanderson, and Mr. Crawford among its teachers.

Impressed by the researches and writings of Dalton and of Daniell, on meteorology, Mr. Espy began to observe the phenomena, and then to experiment on the facts which form the groundwork of the science. As he observed, experimented, and studied, his enthusiasm grew, and his desire to devote himself exclusively to the increase and diffusion of the science finally became so strong that he determined to give up his school, and to rely for the means of prosecuting his researches upon his slender savings and the success of his lectures, probably the most original which have ever been delivered on the subject. His first course was delivered before the Franklin Institute, of Pennsylvania, of which he had long been an active member, and where he met kindred spirits, ready to discuss the principles or the applications of science, and prepared to extend their views over the whole horizon of physical and mechanical research. As chairman of the committee on meteorology, Mr. Espy had a large share in the organization of the complete system of meteorological observations carried on by the institute under the auspices and within the limits of the State of Pennsylvania.

Mr. Espy's theory of storms was developed in successive memoirs in the Journal of the Franklin Institute, containing discussions of the changes of temperature, pressure, and moisture of the air, and in the direction and force of the wind and other phenomena attending remarkable storms in the United States and on the ocean adjacent to the Atlantic and Gulf coast. Assuming great simplicity as it was developed,

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and founded on the established laws of physics and upon ingenious and well-directed original experiments, this theory drew general attention to itself, especially in the United States. A memoir submitted anonymously to the American Philosophical Society of Philadelphia gained for Mr. Espy the award of the Magellanic premium in the year 1836, after a discussion remarkable for ingenuity and closeness in its progress, and for the almost unanimity of its result.

Mr. Espy was eminently social in his mental habits, full of *bonhommie* and of enthusiasm, easily kindling into a glow by social mental action. In the meetings and free discussions in a club formed for promoting research, and especially for scrutinizing the labors of its members—and of which Sears C. Walker, Professor Henry, Henry D. Rogers, and myself were members—Mr. Espy found the mental stimulus that he needed, and the criticism which he courted, the best aids and checks on his observations, speculations, and experiments. But there was one person who had more influence upon him than all others besides, stimulating him to progress, and urging him forward in each step with a zeal which never flagged—this was his wife. Having no children to occupy her care, and being of high mental endowment and of enthusiastic temperament, she found a never-failing source of interest and gratification in watching the development of Mr. Espy's scientific ideas, the progress of his experiments, and the results of his reading and studies; the collection and collation of observations of natural phenomena in the poetical region of the storm, the tornado, and of the aurora. Mrs. Espy's mind was essentially literary, and she could not aid her husband in his scientific inquiries or experiments; her health was delicate, and she could not assist him in his out-door observations; but she supplied what was of more importance than these aids—a genial and loving interest ever manifested in his pursuits and successes, and in his very failures. *Alere flammam* was the office of her delicate and poetical temperament. Younger than Mr. Espy, she nevertheless died several years before him, (in 1850,) leaving him to struggle alone in the decline of life without the sustaining power of her devoted and enthusiastic nature.

Having in a great degree matured his theory of storms; having made numerous inductions from observations, and having written a great deal in regard to it, Mr. Espy took the bold resolution, though past middle age, to throw himself into a new career, laying aside all ordinary employments, and devoting himself to the diffusion of the knowledge which he had collected and increased, by lecturing in the towns, villages, and cities of the United States. This proved a successful undertaking, and by its originality attracted more attention to his views than could have been obtained, probably, in any other way. He soon showed remarkable power in explaining his ideas. His simplicity and clearness enabled his hearers to follow him without too great effort, and the earnestness with which he spoke out his convictions carried them away in favor of his theory. The same power which enabled him to succeed in his lecturing career procured subsequently for Mr. Espy the support and encouragement of some of the leading men in Congress, and especially in the Senate, and also in the executive departments. Their attention was arrested by the originality of his views and his warmth in presenting them, and he imparted so much of his conviction of their truth as to induce many of our statesmen and official persons to exert themselves to procure for him, under the patronage of the Government, continued opportunities for study, research, and the comparison of observations. To the consistent support of his scientific friends, and particularly of the Secretary of this Institution, Mr. Espy owed also much in obtaining the opportunities of keeping in a scientific career. His reports to the Surgeon General of the army, to Congress, and to the Secretary of the Navy, are among his latest efforts in this direction.

The earnest and deep convictions of the truth of his theory in all its parts, and his glowing enthusiasm in regard to it; perhaps, also, the age which he had reached, prevented Mr. Espy from passing beyond a certain point in the development of his theory. The same constitution of mind rendered his inductions from observation often unsafe. His views were positive and his conclusions absolute, and so was the expression of them. He was not prone to examine and re-examine premises and conclusions, but considered what had once been passed upon by his judgment as finally settled. Hence his views did not make that impression upon cooler temperaments among men of science to which they were entitled—obtaining more credit among scholars and men of general reading in our country than among scientific men, and making but little progress abroad.

Feeling that his bodily vigor was failing, and that his life must soon close, the Secretary of the Smithsonian Institution induced him to re-examine the various parts of his meteorological theories of storms, tornados, and water-spouts, and to insert in his last report, while it was going through the press, an account of his most mature views. I trust that the Secretary will, in one of his reports, give us a thorough and

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critical examination of the works and services of this remarkable contributor to a branch of science, the knowledge of which the Smithsonian Institution has already done so much to advance and to diffuse.

On motion of Professor Bache, the following resolutions were adopted:

Resolved, That the Regents of the Smithsonian Institution have learned with deep regret the decease of James P. Espy, one of the most useful and zealous of the meteorologists co-operating with the institution, and whose labors in both the increase and diffusion of knowledge of meteorology have merited the highest honors of science at home, and have added to the reputation of our country abroad.

Resolved, That the Regents offer to the relatives of Mr. Espy their sincere condolence in the loss which they have sustained.

On motion of Mr. Pearce, it was—

Resolved, That the remarks of Professor Bache be entered in the proceedings.

The Secretary introduced the subject of warming the Smithsonian building, stating that it was important to provide better means for this purpose, to insure the safety of those parts of the building which are not fire-proof. The subject was referred to the Executive Committee, and the Secretary was instructed to procure estimates for the introduction of steam or hot water apparatus.

The reading of the report of the Secretary was continued.

The Board then adjourned.

March 17, 1860.

The Board of Regents met this day, at 10 o'clock, a. m.

Present, Hon. John C. Breckinridge, Hon. James M. Mason, Hon. James A. Pearce, Hon. S. A. Douglas, Hon. William H. English, Hon. Benjamin Stanton, Hon. J. G. Berret, Professor A. D. Bache, Mr. Seaton, Treasurer, and the Secretary.

Mr. Breckinridge was called to the chair.

The minutes were read and approved.

The Secretary announced the reappointment, by the Speaker of the House of Representatives, of Hon. William H. English, of Indiana; Hon. Benjamin Stanton, of Ohio; and Hon. L. J. Gartrell, of Georgia, as Regents, for the term of two years.

The Secretary presented the following letter, from Edward Cunard, Esq.:

NEW YORK, *February* 25, 1860.

DEAR SIR: I have to acknowledge the receipt of your letter of the 16th instant, and, in reply, I beg to inform you, that I shall have much pleasure in conveying in our steamers from New York to Liverpool, every fortnight, one or more cases from the Smithsonian Institution to the extent of half a ton or twenty cubic feet measurement. The cases to be addressed to your agent in Liverpool, or to his care. The arrangement of free cases is intended only to apply to those shipped by you from this side of the water.

Your obedient servant,

E. CUNARD.

JOSEPH HENRY, Esq.,
Secretary Smithsonian Institution, Washington.

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The Secretary presented the following letter from Sir W. E. Logan:

MONTREAL, *March*, 1860.

MY DEAR SIR: Understanding that the shells of the United States exploring expedition are being arranged, and that there are many duplicates, I should be rejoiced if a set of them could be obtained for our Provincial Museum. It may be the case that what we may be able to return for them may not equal their value; but the Canadian territory is a large one, and we shall have duplicates of our fossils from various parts, extending from Labrador to Lake Superior.

In our geological expeditions to the eastern part of the province, advantage has been taken of the opportunity to dredge in the Gulf of St. Lawrence, and we shall undoubtedly have duplicates of many of the specimens obtained. This season I hope to send an exploring party to the Straits of Belle Isle.

We are so much pressed with work at present that it may be a little time before our duplicates are ready, particularly as the protracted want of Professor Hall's third volume of the palæontology of New York disables us from naming many of our fossils according to his authority, while a regard for him prevents us from naming them for ourselves. Our Lower Silurian fossils will be the first that will be ready.

I am, my dear sir, very truly yours,

W. E. LOGAN,

Professor HENRY,
Smithsonian Institution, Washington.

A letter was read from Hon. Alfred Ely, chairman of the Committee of Claims of the House of Representatives, relative to an application of an officer of the navy for remuneration of specimens of natural history, &c., collected by the United States exploring expedition.

The subject was discussed, and referred to the Secretary and the Executive Committee.

A letter was read from Sir George Simpson, Governor of the Hudson's Bay Territory, offering to aid the institution in collecting meteorological and other information.

A letter was read from C. Zimmerman, of Columbia, South Carolina, on the subject of the preparation by the institution of manuals on entomology.

The Secretary stated that a proposition had been made by Lieutenant Gilliss, relative to an expedition to the coast of Labrador to observe the total eclipse of July 18th, if the necessary means could be secured to defray the expenses, towards which, if the institution would subscribe $500, the balance, it was believed, could be secured from individuals.

Professor Bache addressed the Board, commending highly the proposed expedition, and stating the advantages which would result to science if the observations could be made.

On motion of Professor Bache, it was—

Resolved, That an appropriation be made, not exceeding $500, to aid in the proposed expedition to observe the eclipse of July 18, 1860.

The Secretary called the attention of the Board to another expedition, proposed by Dr. I. I. Hayes, to the Arctic regions, and sug-

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gested the propriety of aid in furnishing that gentleman with the requisite instruments of observation.

On motion of Mr. Pearce, it was—

Resolved, That the Secretary of the Institution be authorized to furnish such aid to the expedition of Dr. Hayes, in the way of instruments, as may be deemed advisable.

The Secretary introduced the subject of the Stanley gallery of Indian paintings, and stated that Mr. Stanley asked for an allowance of one hundred dollars a year to pay the interest on a debt he had incurred to prevent the sacrifice of the paintings by sale.

The subject was referred to the Secretary and the Executive Committee.

A letter from Professor Secchi, of Rome, was read, stating that he had obtained permission for the institution to procure casts or moulds of celebrated works of art in that city.

The Secretary stated that Mr. Corcoran, of Washington, was about to found a gallery of art, and it was very desirable that the institution should co-operate with him, especially in relation to copies of works of art from Italy.

The subject was referred to the Secretary and the Executive Committee.

The Secretary presented the continuation of his annual report; which was read.

The opinion was expressed by several of the Regents that a less number of lectures should be given than heretofore, twelve being considered sufficient for each season.

The Board then adjourned.

April 7, 1860.

The Board of Regents met this day, at 10 o'clock, a. m.

Present, Hon. James A. Pearce, Hon. S. A. Douglas, Hon. W. H. English, Hon. Benjamin Stanton, Hon. George E. Badger, Professor Bache, and the Secretary.

Mr. Pearce was called to the chair.

The minutes were read and approved.

Mr. Pearce presented the report of the Executive Committee, which was accepted, and the estimates for the year 1860 adopted.

On motion of Mr. Douglas, it was—

Resolved, That the Executive Committee invest the five thousand dollars now in the hands of the Treasurer, belonging to the extra fund.

The Secretary laid before the Board the eleventh volume of Smithsonian Contributions to Knowledge, which had just been issued..

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The Secretary brought before the Board the subject of the pay of the assistants; which, after some remarks, was referred to the Secretary and the Executive Committee.

Professor Bache made the following remarks:

Mr. Gustavus Würdemann, in charge of the tidal observations of the Coast Survey on the Florida reefs and Gulf of Mexico, died at his home in New Jersey on the 30th of September. His health had been failing for some years, and during the last year he had discharged his duties with great difficulty, owing to great physical debility. Mr. Würdemann entered the survey under my predecessor, and served throughout a somewhat extended career, with a fidelity and singleness of purpose that has never been exceeded. Exact truthfulness was the leading trait of his character, and his observations, even the most minute, were always reliable. It is easily seen that it is no exaggeration to say that such a man was invaluable in his place, and an example worthy to be held up as the type of faithfulness. During the discharge of his laborious duties he found time and opportunity to make collections in natural history, which have been acknowledged by the Smithsonian Institution as among the most valuable contributions to the knowledge of the fauna of Florida.

On motion of Professor Bache, the following resolution was unanimously adopted:

Resolved, That the Regents of the Smithsonian Institution have learned with regret the decease of Gustavus Würdemann, tidal observer in the Coast Survey, whose collections of specimens from the coast of the Gulf of Mexico, and especially of the birds of Florida, liberally furnished to the Smithsonian Institution, have proved of great importance in increasing our knowledge of the natural history of the southern part of the United States.

Resolved, That this resolution be communicated to the widow of Mr. Würdemann.

The Secretary read the following authentic notice, which had appeared in a recent periodical, respecting the late Professor Cleaveland:

"Professor Parker Cleaveland died on the 15th of October, 1858. He was born in Rowley, (Byfield parish,) Massachusetts, January 15, 1780; graduated at Harvard College in 1799; taught school and studied law until 1803, when he was appointed tutor in mathematics in Harvard College. He was made professor of mathematics and natural philosophy, chemistry and mineralogy in Bowdoin College in 1805, and discharged with distinguished ability the extended duties of that professorship until 1828, when a professor of mathematics was appointed, and he was relieved from that part of his labor. He continued to be the professor in the other departments until his death. He became widely known in the United States, and in Europe, by his early and successful treatise on mineralogy and geology, published in 1816, and in a second edition in 1822. A third was called for, and he labored in its preparation more or less for thirty-five years, leaving it nearly ready for the press. His high reputation as a lecturer was spread through the country by a succession of graduates of Bowdoin College of more than fifty years. He was a member of the American Academy of Arts and Sciences, and of many literary and scientific societies in this country and in Europe. In 1824, the honorary degree of Doctor of Laws was conferred on him by Bowdoin College. In private life he was universally respected for his unblemished moral character, and his genial and affable disposition. His death called forth unusual and remarkable demonstrations of respect to his character and memory. In June, 1853, he was elected an honorary member of the Smithsonian Institution."

On motion of Mr. Douglas the following resolutions were adopted:

Resolved, That the Regents of this Institution have learned with deep regret of the decease of Professor Parker Cleaveland, of Bowdoin College, one of the honorary members of this establishment, who was highly esteemed on account of his labors as a man of science and a teacher, and whose memory will be held in grateful remembrance.

Resolved, That the Regents offer to the family of the deceased their sincere condolence at the loss which they and the country have sustained.

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The Secretary presented the following letter from Mr. Ross, chief factor of the Hudson's Bay Company:

FORT SIMPSON, MCKENZIE'S RIVER, *30th November*, 1859.

DEAR SIR: At the period of the departure of our usual winter express I sit down to write you a few lines upon the subjects mentioned in your communication of the 2d of April, 1859. I trust that the various cases sent you last summer from Portage La Roche reached you in safety, and that the contents proved satisfactory and of interest. It will be my endeavor during the present and succeeding seasons to collect the animals mentioned as being wished for by the Smithsonian Institution; but I will not merely restrict myself to these particular objects of research, the whole field of either science or curiosity will be considered in all contributions which I may hereafter forward to your collection.

The Meteorological Register for the months of September, October, and November, will be forwarded by this conveyance, and I will endeavor to organize a systematic series of observations at all the posts throughout this district. These, of course, will vary as to completeness and accuracy according to the tastes and acquirements of the officer who conducts the registry, as there are very wide differences in the education and talents of the various persons in the progressive grades of our service. A series of spirit thermometers of assured correctness would be useful, in fact are absolutely necessary for this purpose.

As my attention will hereafter be particularly directed to ethnological pursuits, and my public duties in conducting the affairs of this large district are not very light, it will be impossible to keep the regular series of meteorological observations here myself, but I will delegate this duty to Mr. Andrew Flett, a very careful and intelligent person, though not of a finished education; but any extraordinary phenomena I will note myself in addition.

By the usual summer boats a packet will be forwarded to your address, containing such observations as I can collect in our journals, and a complete auroral and weather register taken by myself for Colonel Lefroy in 1850–'51, if I can find the latter.

In conclusion I will merely say that all that lies in my power will be done to oblige you in any way. Every facility will be given to Mr. R. Kennicott to collect and forward specimens of natural history; free passage will be allowed him from post to post throughout the district, and to all his plans the various officers under my command will, I am sure, gladly render assistance.

I have the honor to remain, dear sir, yours faithfully,

BERNARD R. ROSS.

Professor HENRY,
Smithsonian Institution.

The reading of the report of the Secretary was then continued.

On motion of Mr. Badger, the following resolution was adopted:

Resolved, That the thanks of the Board of Regents are hereby given to the various companies and individuals who have generously aided in advancing the objects of the Smithsonian Institution and the promotion of science, by the facilities they have afforded in the transportation of books, specimens, &c., free of charge.

The Board then adjourned to meet at the call of the Secretary.

January 16, 1861.

In accordance with a resolution of the Board of Regents of the Smithsonian Institution, fixing the time of the beginning of their annual session on the third Wednesday of January of each year, the Board met this day in the Regents' room.

No quorum being present, the Board adjourned to meet at the call of the Secretary.

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February 16, 1861.

The Board of Regents met this day, at 10 o'clock, a. m., in the Regents' room.

Present, Hon. James A. Pearce, Hon. James M. Mason, Hon. S. A. Douglas, Hon. W. H. English, Hon. Benjamin Stanton, General Joseph G. Totten, Professor A. D. Bache, and the Secretary.

Mr. Mason was called to the chair.

The Secretary stated that there are at present three vacancies in the Board of Regents, among the class of citizens at large, namely: the vacancy occasioned by the expiration of the term of service of Hon. Gideon Hawley, of Albany, who declines a re-election on account of inability to attend; that occasioned by the death of Hon. Richard Rush; and that by the expiration of the term of Dr. C. C. Felton, of Harvard University; and that a resolution was sometime since presented to the Senate of the United States to fill these vacancies, which had not yet been acted upon.

Mr. Pearce presented the report of the Executive Committee, with the estimates for the year 1861; which was read and adopted.

A communication addressed to the Secretary, relative to the Wynns estate was read.

The Secretary stated that since the death of Hon. Richard Rush, no communication had been received in regard to the remainder of the Smithsonian bequest left in England, as the principal of an annuity to the mother of the nephew of Smithson; whereupon, on motion of Mr. Bache, it was—

Resolved, That the Secretary be requested to communicate with Messrs. Clarke, Fynmore & Fladgate, attorneys in London, informing them of the death of Hon. Mr. Rush, and making inquiry as to the present condition of this annuity.

On motion of Mr. English, it was—

Resolved, That the Secretary be directed to adjust the accounts of the Regents for travelling and other expenses, at each annual or special meeting, according to the provisions of the act of organization.

A letter was read relative to the debt of the State of Arkansas, desiring the Regents to unite with other parties in endeavoring to recover it.

The Secretary stated that he had replied, giving as his individual opinion that the Regents are in no way interested in this matter; the United States having assumed the debt originally due from the State of Arkansas to the Smithsonian fund.

On motion, it was—

Resolved, That the Board concur in this opinion.

A communication addressed to the Board, from H. A. Gaston, of

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Napa City, California, requesting aid in introducing a new steam engine, was read.

The Secretary stated that this communication was one of a large class usually addressed to himself in his official capacity; that he had answered these communications by stating that it did not form a part of the policy of the institution to give an opinion as to the merits of any invention, or to render assistance to any enterprise which, though it might be of importance to the public, was undertaken for the immediate benefit of an individual; that the Government of the United States had enacted laws granting an exclusive monopoly to inventors as a reward for their ingenuity, and that they must apply to the Patent Office for the means of securing a remuneration for their labors. That if, however, in any case, an individual has made an invention for which he does not intend to take out a patent, then the institution would accept on the usual conditions, an account of such invention, and would make it known through the Smithsonian publications, to the civilized world, thus securing to the inventor the *reputation* which might justly be his due.

The following memorial was presented from distinguished citizens of Philadelphia, accompanied by a letter from Mr. Lowe:

To Professor JOSEPH HENRY,
Secretary of the Smithsonian Institution, Washington, D. C.

The undersigned, citizens of Philadelphia, have taken a deep interest in the attempt of Mr. T. S. C. Lowe to cross the Atlantic by æronautic machinery, and have confidence that his extensive preparations to effect that object will add greatly to scientific knowledge. Mr. Lowe has individually spent much time and money in the enterprise, and, in addition, the citizens of Philadelphia have contributed several thousand dollars to further his efforts in demonstrating the feasibility of trans-Atlantic air navigation. With reliance upon Mr. Lowe and his plans, we cheerfully recommend him to the favorable consideration of the Smithsonian Institution, and trust such aid and advice will be furnished him by that distinguished body as may assist in the success of the attempt, in which we take a deep interest.

JOHN C. CRESSON.
WILLIAM HAMILTON.
W. H. HARRISON.
HENRY SEYBERT.
J. CHESTON MORRIS, M. D.
ISAAC LEA.
FAIRMAN ROGERS.
JAMES C. FISHER, M. D.
THOS. STEWARDSON, M. D.
J. B. LIPPINCOTT.
GEORGE W. CHILDS.
JOHN GRIGG.
S. S. HALDEMAN.
JOHN F. FRAZER.
GEORGE HARDING.
M. McMICHAEL.

PHILADELPHIA, *December*, 1860.

On motion of Mr. Mason, it was—

Resolved, That the Secretary be requested to give Mr. Lowe any advice which he

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may deem fit, as to his experiments; and to reply to the memorialists stating the reasons why the Regents do not consider themselves at liberty to make any appropriation from the Smithsonian fund for the purpose mentioned in the communication.

Several communications received by the Secretary from David P. Holton, were read and referred to the Executive Committee.

The following letters, also, were presented by the Secretary:

[Translation.]

BERLIN, *November* 24, 1860.

SIR: I have received the last invoice of publications, which through your kindness has been presented to me by your great and liberal institution. The grammar and dictionary of the Yoruba language, by Mr. Bowen, have especially interested me.

Expressing my thanks to the honorable directors, I have the pleasure to send some of my latest publications, with the request that they be placed in the Smithsonian Library. They are the following:

1. Two volumes of my "Kōnigsbuch," containing the chronological restitution of the Egyptian dynasties of Manethon, and the collection of the hieroglyphical names of all the kings; being, as it were, a supplement to the great work "On the Monuments of Egypt and Ethiopia," prepared by myself at the expense of the State, a copy of which the King, at my suggestion, has presented to the Smithsonian Library. Of this you have lately received the last series of plates, and the *descriptive text* will be sent as soon as I can finish it.
2. A dissertation, read at our Academy of Sciences, on the "Extent of the Egyptian History after Manethon."
3. Another similar one on several points of "Chronology."
4. A volume of thirty-seven plates, representing the pictures executed, under my direction, upon the walls of the Egyptian museum, in Berlin.

To these I add some pamphlets relating to the introduction of a general linguistic or standard alphabet for expressing foreign languages, which have either not been written at all or not in European characters. They are, for the present:

5. An English copy of the pamphlet I have published on the standard alphabet.
6. A German copy of the same.
7. Translation, by Mr. Lechler, of the Gospel of St. Matthew into Chinese, in the characters of the standard alphabet.
8. Translation, by myself, of the Gospel of St. Mark, into the Nubian language; printed in types of the standard alphabet. This forms part of a book which also contains the grammar and dictionary of the Nubian and several other similar languages, the printing of which is not yet finished.

The two copies of the standard alphabet are of the first edition. We are just now printing the second, with some slight alterations and a much more complete collection of alphabets. I shall send it in time, and would not, at present, have transmitted the first edition, the small number of copies of which has actually been withdrawn, if it were not of special interest for a library to follow up the gradual development of a subject of general importance.

You will see from the pamphlet that most of the missionary societies have decided to introduce the alphabet, the American Board of Commissioners for Foreign Missions included, and that the number of books printed in these characters is rapidly augmenting. I know of sixty or more. I do not know whether you have any opportunity of exercising an influence among the savans of your country in favor of the adoption of the standard alphabet. At any rate you will allow me to recommend such a course. Mr. Bowen, from his Yoruba grammar, seems not to have had any knowledge of it; while Mr. Crouther, his learned predecessor in the grammar of this language, has already adopted it in his later publications; and Mr. L. Grout, also of the American Board, has made use of and has earnestly recommended it in his excellent grammar of the Zulu-Kaffir.

I should feel very grateful, if you will let me know whether there has been any attention given to this question with you, and if you would communicate to me whatever may relate to the subject. The original languages of America will be found transcribed in much greater number in the second edition of the standard alphabet; and, if you know of any scholar who makes the study of these languages his specialty, and who could give me instructions as to the exact pronunciation of the letters of some of them, I would be much obliged if you would make me acquainted with him.

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Among your former publications, besides those relating to linguistics and ethnology, such as the grammar of the Dakota language, there are also memoirs relating to the antiquities of different parts of America, viz: the researches of Squier and Davis on the monuments of the Mississippi. I received from Mr. Squier himself his memoir on the monuments of New York, (vol. II, art. 9;) and also have most of the writings of Squier, Pickering, and Morton, in separate publications; but of your antiquarian publications I am still in want of the following: Vol. I; vol. II, art. 2; III, 6, 7; VII, 5. I do not venture to designate other memoirs that would gratify my general interest in American science; yet I should be highly obliged if you would continue the transmission of your reports, and add those of the foregoing volumes which you can most readily spare.

Will you let me know whether you have already the first volume of my "Egyptian Chronology;" if not, I shall not fail to send a copy.

I beg your pardon for this long letter, which I fear has taken too much of your time, occupied by many other subjects.

Accept the expression of the high consideration with which I am, sir, your most obedient,

R. LEPSIUS.

Professor JOSEPH HENRY,
Secretary of the Smithsonian Institution.

MELBOURNE BOTANIC AND ZOOLOGIC GARDEN, *October* 25, 1860.

HONORED AND DEAR SIR: I owe you my grateful acknowledgment of transmitting to me, through the kindness of Hon. William Haines, the valuable reports of the Smithsonian Institution for 1857 and 1858, and the celebrated work on the North American algae, furnished by our common friend, Dr. Harvey.

Whilst expressing my warmest thanks for having been deemed worthy, by your noble institution, to share in the gifts which, by the world-famed liberality of the Smithsonian Institution, the men of science so extensively enjoy, I beg to state that it will be a source of pleasure to me to endeavor to reciprocate your friendly offers, and that I hope, through Prof. Asa Gray, within a few months, to lay several recent publications of mine, including the first volume of the "Plants of Victoria," before your institution and other American scientific associations.

If I can in any way serve the laudable purposes of your excellent institution, I hope you will freely command my services.

Most regardfully, dear Professor Henry, yours,

FERD. MUELLER.

The Secretary gave an account of what had been done in relation to the distribution of duplicate specimens of natural history, and read several letters acknowledging the receipt of the donations, and expressing appreciation of the policy adopted by the institution. Among these was the following:

UNIVERSITY OF TORONTO, *December* 3, 1860.

DEAR SIR: In acknowledging the receipt of about two hundred species of shells sent to the University Museum, through the liberality of the Regents of the Smithsonian Institution, I beg to express my very high appreciation of the disposition manifested by the institution to make its superfluous stores available in the communication of knowledge in various places, and even beyond the limits of the United States. The contribution now made is a very valuable addition to the museum of the University of Toronto, even those species of which we have already specimens being interesting from their authentic names and known habitats. * * We are deeply obliged by the kindness manifested; and if we find any way of reciprocating it, I shall personally feel the greatest pleasure in promoting your views.

Believe me to be, dear sir, very faithfully yours,

WILLIAM HINCKS.

The SECRETARY OF THE SMITHSONIAN INSTITUTION.

Copies of the several papers and miscellaneous articles published by the institution, since the last annual session, were laid before the Board.

The fact was stated that the Potomac water had been brought

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by Government through the grounds of the Smithsonian Institution, to the middle of the south front of the building; that the institution was now supplied with rain water from the cisterns in the towers, but as the supply from this source was uncertain, it was desirable that the Potomac water should be introduced; whereupon it was—

Resolved, That the Secretary procure plans and estimates for the introduction of the Potomac water into the building, and that the Secretary and the Executive Committee be authorized to make contracts for this purpose.

The Secretary presented his annual report of the operations of the institution; which was read in part.

The Board then adjourned, to meet on Tuesday, February 19, at 8 o'clock, p. m.

February 19, 1861.

The Board met at 8 o'clock, p. m., in the Regents' room of the Smithsonian Institution.

Present, Hon. James M. Mason, Hon. W. H. English, Hon. B. Stanton, General Joseph G. Totten, Professor A. D. Bache, and the Secretary.

Mr. Mason was called to the chair.

The minutes were read and approved.

The report of the Secretary was read and adopted.

The Board then took a recess till Friday evening.

February 22, 8 *p. m.*

Present, Messrs. Pearce, Douglas, English, and Totten.

The Secretary read the appendix to his annual report.

The Secretary presented the following letters, which he had prepared in accordance with the resolution of the Board, relative to aerial navigation, in answer to the memorial of citizens of Philadelphia, and to the communication of Mr. Lowe:

SMITHSONIAN INSTITUTION,
WASHINGTON, D. C., *March* 8, 1861.

GENTLEMEN: Your communication, addressed to the Smithsonian Institution, commending Mr. Lowe to the Board of Regents, for assistance in carrying out his proposed experiment to cross the Atlantic by means of a balloon, was duly received. It was presented to the Board of Regents at their meeting of February 16, was respectfully considered, and, after due deliberation, the following resolution was adopted:

"*Resolved*, That the Secretary be requested to give Mr. Lowe any advice which he may deem fit as to his experiments; and to reply to the memorialists, stating the reasons why the Regents do not consider themselves at liberty to make any appropriation from the Smithsonian fund for the purpose mentioned in the communication."

In accordance with the above resolution I would state that the Board of Regents of the Smithsonian Institution are responsible to the Government and to the world

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for the prudent expenditure of the income of the Smithson bequest, and, inasmuch as the proposed experiment is one which, in the minds of the majority of considerate and reflective persons, is of great hazard, the Regents do not think, whatever might be their individual desire to advance the art of aerial navigation, that they would be justified in making an appropriation from the Smithsonian income to assist in this enterprise.

Any questions which may be propounded to me in regard to the experiment of Mr. Lowe will be cheerfully answered, as far as we have the means of giving the required information.

I have the honor to be, very respectfully, your obedient servant,

JOSEPH HENRY,
Secretary Smithsonian Institution.

To Messrs. JNO. C. CRESSON, ISAAC LEA, and others,
Philadelphia.

SMITHSONIAN INSTITUTION,
WASHINGTON, D. C., *March* 11, 1861.

DEAR SIR: In reply to your letter of February 25, requesting that I would give you my views in regard to the currents of the atmosphere and the possibility of an application of a knowledge of them to aerial navigation, I present you with the following statement, to be used as you may think fit.

I have never had faith in any of the plans proposed for navigating the atmosphere by artificial propulsion, or for steering a balloon in a direction different from that of the current in which the vehicle is floating.

The resistance to a current of air offered by several thousand feet of surface, is far too great to be overcome by any motive power at present known which can be applied by machinery of sufficient lightness.

The only method of aerial navigation which in the present state of knowledge appears to afford any possibility of practical application, is that of sailing with the currents of the atmosphere. The question, therefore, occurs as to whether the aerial currents of the earth are of such a character that they can be rendered subservient to aerial locomotion.

In answering this question, I think I hazard little in asserting that the great currents of the atmosphere have been sufficiently studied to enable us to say with certainty that they follow definite courses, and that they may be rendered subservient to aerial navigation, provided the balloon itself can be so improved as to render it a safe vehicle of locomotion.

It has been established by observations extending now over two hundred years, that, at the surface of the earth, within the tropics, there is a belt along which the wind constantly blows from an easterly direction; and, from the combined meteorological observations made in different parts of the world within the last few years, that north of this belt, between the latitudes of 30° and 60°, around the whole earth the resultant wind is from a westerly direction.

The primary motive power which gives rise to these currents is the constant heating of the air in the equatorial, and the cooling of it in and toward the polar regions; the eastern and western deflections of these currents being due to the rotation of the earth on its axis.

The easterly current in the equatorial regions is always at the surface, and has long been known as the trade winds, while the current from the west is constantly flowing in the upper portion of the atmosphere, and only reaches the surface of the earth at intervals, generally after the occurrence of a storm.

Although the wind, even at the surface, over the United States and around the whole earth between the same parallels, appears to be exceedingly fitful; yet when the average movement is accurately recorded for a number of years, it is found that a large resultant remains of a westerly current. This is well established by the fact that on an average of many years, packet ships sailing from New York to Great Britain occupy nearly double the time in returning that they do in going.

It has been fully established by continuous observations collected at this institution for ten years, from every part of the United States, that, as a general rule, all the meteorological phenomena advance from west to east, and that the higher clouds always move eastwardly. We are therefore, from abundant observation, as well as from theoretical considerations, enabled to state with confidence that on a given day, whatever may be the direction of the wind at the surface of the earth, a balloon elevated sufficiently high, would be carried easterly by the prevailing current in the upper or rather middle region of the atmosphere.

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I do not hesitate, therefore, to say, that provided a balloon can be constructed of sufficient size, and of sufficient impermeability to gas, in order that it may maintain a high elevation for a sufficient length of time, it would be wafted across the Atlantic. I would not, however, advise that the first experiment of this character be made across the ocean, but that the feasibility of the project should be thoroughly tested, and experience accumulated by voyages over the interior of our continent. It is true that more eclat might be given to the enterprise, and more interest excited in the public mind generally, by the immediate attempt of a passage to Europe; but I do not think the sober sense of the more intelligent part of the community would be in favor of this plan; on the contrary, it would be considered a premature and foolhardy risk of life.

It is not in human sagacity to foresee, prior to experience, what simple occurrence, or what neglect in an arrangement, may interfere with the result of an experiment; and therefore I think it will be impossible for you to secure the full confidence of those who are best able to render you assistance except by a practical demonstration, in the form of successful voyages from some of the interior cities of the continent to the seaboard.

Very respectfully, your obedient servant,

JOSEPH HENRY,
Secretary Smithsonian Institution.

T. S. C. Lowe, Esq.,
Philadelphia, Pa.

The Board then adjourned *sine die.*

January 15, 1862.

In accordance with a resolution of the Board of Regents of the Smithsonian Institution, fixing the time of the beginning of their annual session on the third Wednesday of January of each year, the Board met this day in the Regents' room at 11 o'clock a. m.

Present, Hon. H. Hamlin, Hon. J. A. Pearce, Hon. E. McPherson, Hon. S. S. Cox, Hon. Richard Wallach, and the Secretary.

The Secretary stated that since the last session of the Regents the following changes had taken place in the Board, viz:

Hon. Hannibal Hamlin, as Vice-President of the United States, has become *ex officio* a member of the Board. The vacancy occasioned by the death of Hon. Richard Rush has, by joint resolution of Congress, approved March 2, 1861, been filled by the appointment of Hon. William L. Dayton, of New Jersey; the vacancy caused by the expiration of the term of Hon. Gideon Hawley, by the appointment of William B. Astor, of New York; and that by the expiration of the term of Cornelius C. Felton, of Massachusetts, by the reappointment of the same gentleman.

The Secretary also stated that on the 7th of March, 1861, the Vice-President of the United States reappointed Hon. James A. Pearce a Regent for the term of six years, and on the 4th of December, 1861, he appointed Hon. W. P. Fessenden, of Maine, and Hon. L. Trumbull, of Illinois, to fill the vacancies occasioned by the decease of Hon. S. A. Douglas and the removal of Hon. J. M. Mason; and that on the 19th of December the Speaker of the

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House appointed Hon. S. Colfax, of Indiana, Hon. S. S. Cox, of Ohio, and Hon. E. McPherson, of Pennsylvania, as Regents for the term of two years.

In addition to the foregoing, Hon. Richard Wallach having been chosen Mayor of the city of Washington, in place of Mr. Berret, resigned, has become *ex officio* a member of the Board.

The Secretary made a statement relative to the present condition of the Institution and its operations, but as several of the Regents were obliged to leave on account of Congressional duties the Board adjourned to meet on Saturday, February 8.

February 8, 1862.

The Board of Regents met this day at 10 o'clock a. m. in the Regents' room.

Present, Hon. H. Hamlin, Vice-President of the United States; Hon. James A. Pearce, Hon. Lyman Trumbull, Hon. S. Colfax, Hon. S. S. Cox, Hon. Edward McPherson, Hon. R. Wallach. In the absence of the Chancellor, Hon. Mr. Hamlin was called to the chair.

Mr. Pearce presented the report of the Executive Committee, containing an account of the receipts and expenditures for the year 1861, and estimates for 1862, which was read and approved.

Mr. Pearce also gave an account of the financial arrangements of the Institution, the care exercised in expenditures, the examination of vouchers, &c.

1. The disbursements are authorized by the Secretary, in accordance with the appropriations made by the Board.

2. The accounts are audited by the Chief Clerk, and in the more important cases are examined by experts as to the reasonableness of the charges.

3. The bills are next presented to the Secretary for approval and for orders on the Treasurer to pay them.

4. They are then copied in detail into a day-book in chronological order, and the amounts posted in a ledger under the heads of the different appropriations.

5. The accounts and vouchers are semi-annually placed in the hands of Mr. W. B. Randolph, (Chief Clerk of the Treasurer of the United States,) for critical and final revision, and for the preparation of a general statement of receipts and expenditures during the year.

6. At the end of the year all the books and accounts are carefully

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examined by the Executive Committee, and the result reported to the Board of Regents.

The Secretary presented his annual report of the operations of the Institution during the year 1861, which was read and approved.

The Board then adjourned to meet at the call of the Secretary.

May 1, 1862.

The Board of Regents met this day at ten o'clock a. m. in the Regents' room.

Present, Hon. L. Trumbull, Hon. Edward McPherson, Hon. R. Wallach, General J. G. Totten, Professor A. D. Bache, Dr. Theodore D. Woolsey, and the Secretary.

General Totten was called to the chair.

The minutes were read and approved.

The Secretary announced that since the last meeting of the Board Dr. C. C. Felton had deceased, and that Congress had, by joint resolution, appointed Theodore D. Woolsey, LL.D., President of Yale College, to fill the vacancy thus occasioned.

Professor Bache, after a few appropriate remarks, offered the following resolutions, which were unanimously adopted:

Resolved, That the Board of Regents of the Smithsonian Institution deeply mourn the loss of their fellow-regent, Cornelius Conway Felton, the distinguished President of Harvard University, whose profound learning and ready use of the rich stores of ancient and modern lore excited general admiration, while his genial temper, affectionate disposition, and open manners, endeared him as a friend to every member of this establishment.

Resolved, That in the death of President Felton our country, in the hour of its trial, has lost a wise and influential citizen, our Government a warm and eloquent supporter, Harvard University a learned and efficient head, and this Institution an active and valued Regent.

Resolved, That we sincerely condole with the bereaved family of President Felton, and offer to them our heartfelt sympathy in their deep affliction.

Resolved, That Dr. Woolsey be requested to prepare a suitable notice of President Felton, to be inserted in the Journal of the Board of Regents.

Resolved, That a copy of these resolutions be communicated by the Secretary of the Smithsonian Institution to the family of the deceased, and to the faculty and corporation of Harvard.

EULOGY BY PROFESSOR WOOLSEY.

The duty has been laid upon me of preparing a brief tribute to the memory of Cornelius C. Felton, late a Regent of the Smithsonian Institution. I undertake this office the more readily, because a friendly and most pleasant acquaintance of nearly thirty years standing, cemented by common pursuits and unbroken by any of those jealousies which sometimes divide men of the same literary calling, has enabled me to form a definite opinion of the worth and services of one whose death the country, in common with Massachusetts and with Harvard University, deplores.

Cornelius Conway Felton, the son of worthy but by no means opulent parents, was born at West Newbury, Massachusetts, November 6, 1807. The first decided impulse in the direction of scholarship and of a taste for letters was given to him by Simeon Putnam, who kept a private school at North Andover, with whom he remained as a pupil a year and three months. In this year and a quarter prior to his entrance into college, Putnam awakened so great an enthusiasm in the mind of his pupil, that the latter, according to a statement in manuscript drawn up by one of his friends, "read

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Sallust four times, Cicero's Orations four times, Virgil six times, Dalxel's Græca Minora five or six times, and the poetry of it till he could repeat nearly all of it from memory, the Annals and History of Tacitus, Justin, Cornelius Nepos, the Anabasis of Xenophon, four books of Robinson's Selections from the Iliad, the Greek Testament four times, besides writing a translation of one of the Gospels, and writing a translation of the whole of Grotius de Veritate, which he brought in manuscript to college; also he wrote a volume of about three hundred pages of Latin exercises, and one of about two hundred pages of Greek exercises, and studied carefully all the mathematics and geography requisite to enter college." That the severe study necessary in order to do all this in so short a time might be detrimental to his health will be readily believed. He suffered from these overstrained efforts during his residence in college and afterward. Still he continued his course of earnest study through his college life, devoting a good deal of spare time to extra Greek, and forming an acquaintance with several of the modern languages and with the Hebrew. Besides which he contributed to his own support in several ways, especially by keeping school during parts of his sophomore and junior years, and in the latter year by teaching mathematics for six months in the Roundhill school at Northampton, under Messrs. Cogswell and Bancroft. He was prepared, by this introduction into the art of teaching and by his excellent scholarship, for the employment in which he was engaged for two years from the time of his graduation—the charge of a high school at Geneseo, New York, which he undertook in company with two of his classmates. From Geneseo he was called back, in 1829, to his Alma Mater to fill the office of Latin tutor, from which department he was transferred the next year to the Greek. His election to the chair of college professor in 1832, showed the estimation in which he was held by the authorities of the University. On the resignation of Dr. Popkin in 1833, who had the chair of Greek literature upon the Eliot foundation, Mr. Felton was appointed his successor, and continued in his professorship until his elevation to the presidency in 1860. Thus thirty years of his life were spent in cultivating and teaching Greek letters.

As a Greek scholar, he was not surpassed for breadth and accuracy by any other in the land. His nature was many-sided, and he strove after complete scholarship both in what pertained to the language and in what pertained to all the branches of the literature of the Hellenic race. Yet, like every other scholar, he had his favorite departments of pursuit, while other sides of it had less attraction for him. To linguistics and general philology and to the verbal side of Greek learning he was not so much drawn as to all the manifestation of the Greek mind and life. Here again it was Athens in her palmiest days; it was her unrivalled dramatic poets, and especially that prince of the ancient comedy, who disclosed to us the life of Athens at the pinnacle of her renown, and when she was sliding down from her eminence—it was this age and these monuments of Greece which had the greatest charms for him. The spirit of Aristophanes lodged in Professor Felton; he had the same sense of the ludicrous, the same keen judgment of character, the same underlying earnestness of patriotism, the same political conservatism.

A mind which had such a strong relish for exhibitions of life in the concrete forms would be apt to convey pleasant and profitable instruction. Professor Felton seems to have been a very genial instructor, clear in his conceptions and explanations, sufficiently strict in grammatical analyses and in keeping his pupils to their tasks, and yet relieving the tedium of the recitation room by lively illustrations of the author read, so that the lesson was not more a task than a pleasure, enriching and beautifying everything by reference to ancient art, as well as by a pure manly taste which went along with its whole scholarship.

This æsthetical power of his mind deserves a more distinct mention. He had within him a love of art, and his judgment, natively sound, was improved by devotion to a language and a literature which cultivate the taste more than any other. To him, therefore, the life of Greece consisted not solely in its poets, orators, historians, and philosophers, but in the euphonies of its words, in the rhythm of its periods, in its wondrously exquisite and varied poetical metres, in its simple but grand architecture, in those works of its sculptors and founders which immortalized over again the materials of a literature already immortal.

Here we may add that he had two opportunities of inspecting the monuments of Greek art, and of visiting that land where so many of his thoughts had dwelt. In 1853 and the following year he devoted five months of a European tour to Greece, ancient and modern, to her present life and the remains of her past glory; and again in 1858 he spent part of another summer in the same land. Whatever reminded of ancient days and enabled him to conceive more clearly and understand more fully the meaning of the ancient writers, together with those reliques of art which time and

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barbarism have spared—this naturally claimed his attention first; but he sympathized also with the free, hopeful, restored Greece of the present; he examined the workings of her political institutions, visited the halls of legislation at the capital, formed an acquaintance with the learned men who adorn the University of Athens, and returned in the faith that modern Greece has a noble destiny before her. He was led by his tours to connect the Greek and the Romaic languages more closely together, to urge the importance of studying the latter, and to advocate the application of the modern pronunciation to the literature of the ancient tongues. Not long after his return from his first journey, in the year 1856, he published selections from modern Greek writers, accompanied with explanatory notes, and a little earlier enriched an American edition of Smith's "History of Greece" with a preface, notes, and a continuation of Greek History from the Roman conquest until the present time.

While engaged in the daily duties of a laborious profession, Mr. Felton found leisure to prepare for the press a number of editions of Greek authors and other works within the same department. His maiden work of this kind was an edition of Homer's Iliad, published in 1833, with English notes—which were carefully revised and enlarged in subsequent editions—and with the addition of Flaxman's illustrations. Next, in 1840, he sent forth from the press a Greek reader, containing selections from writers of the best stamp—a work which has been repeatedly printed, and has maintained its ground among the principal introductions to the study of that language. This was followed in the next year by an edition of the Clouds of Aristophanes, with an introduction and a commentary, which appeared again in a revised form and was republished in England. In 1843, in conjunction with Professor Edwards, of Andover, and Professor Sears, then of the Baptist Theological Seminary at Newton, he published a work entitled Classical Studies, consisting principally of translations from the German, his contributions being selections from the works of Frederic Jacobs. In 1844 he rendered a valuable service to classical literature by translating, in conjunction with Professor Beck, Munk's Treatise on Greek and Roman Metres. Three years afterward appeared his editions of the Panegyricus of Isocrates—that much polished closet-oration of the "old man eloquent," and of the Agamemnon of Æschylus—that difficult chef d'œuvre of the earliest dramatist. Both of these passed into second editions. In 1849 he brought out an edition of the Birds of Aristophanes, and in 1852 "Selections from Greek Historians," namely, from Herodotus, Thucydides, Xenophon, Polybius, Diodorus Siculus, Arrian, and Pausanias. In the course of the same year appeared a tribute from his pen to the memory of his immediate predecessor in the Eliot professorship, entitled "Selections from the Writings of Dr. Popkin, with a Biographical Sketch."

These were his principal contributions through the press and bearing his own name, to the main study of his life. But we ought not to pass over his frequent lectures and anonymous writings, tending to illustrate and recommend Greek learning, such as his four courses of Lowell Lectures, and his frequent contributions to the *North American Review*.

Nor ought the briefest sketch of Mr. Felton's life to omit his literary labors beyond his own immediate province. As his mind strove to grasp universal knowledge, and as he maintained a lively sympathy with the literature of most of the cultivated nations, so, from time to time, he poured forth through the press the gatherings of his rich and many-sided mind. Among his original works we mention his "Life of General Eaton," in the ninth volume of the first series of Spark's "American Biographies;" his biographical notices accompanying Longfellow's "Poets and Poetry of Europe;" his articles in the *North American*, upwards of fifty, and in the *Christian Examiner*, upwards of twenty-five in number; his contributions to the *New American Encyclopædia*,* and others less elaborate in the daily journals. If with these we take into view the help which he lent in various ways to education and science, as one of the Massachusetts Board of Education, as one of the school committee for the town of Cambridge, and as Regent of the Smithsonian Institution—to which trust he was elected on the resignation of Mr. Choate, in 1856, and re-elected for the full term of six years in February, 1861—and if we bring into account, also, his labors for a number of years in the office of Regent in Harvard University, and that at the same time he gave instructions in a school under the charge of Professor Agassiz, we shall wonder that one man, besides the duties of a very laborious professorship, was able to do so much, and perhaps wonder still more that he did it at all so easily to himself and so well. It is rare, we imagine, to find a life of so much faithful, patient industry united to a temper so genial and social as his, so capable of finding entertainment and recreation on every side.

* Some of these were on Agassiz, Athens, Attica, Demosthenes, Euripides, and Homer.

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The services of such an academical officer could not fail to be prized and honored. Years before his election to the presidency of Harvard, his name was prominent among those who were thought of for that post; and when President Walker felt compelled by ill-health to retire from the station which he had filled so wisely and satisfactorily, the voice of the public anticipated the votes of the boards which constituted Professor Felton his successor. He was inaugurated into his new office July the 19th, 1860, and those who heard his address pronounced upon that occasion, if they had not known the man before, must have felt assured that his administration would be firm and vigorous. The distinct opinion which he there avows, that no offences against civil order can be tolerated in a college which would not be borne in the wider circles of citizens—that academical walls can furnish no refuge for crimes, nor academical relations justify outrages on gentlemanly propriety, or on the feelings of fellow-students, was one which commends itself to all who are acquainted with our higher institutions of learning, and which, if united in the carrying of it out with such kindliness as was manifest in the character of President Felton, would strengthen and secure everything that is good in a college life. Whatever temporary obstacle or local custom, "more honored in the breach than in the observance," might oppose for a time, it is certain that the claims of law and order would at length prevail, and the state of things afterwards become so much the better.

President Felton entered thus into his new duties, with the confidence of the wisest and best on his side, and gave himself up chiefly to administrative functions, not without deep regrets, we are sure, at leaving those pleasant toils which had filled thirty years of his life. But Divine Providence had scarcely invested him with his new authority when he was summoned away from these earthly responsibilities and labors. A little less than two years of his official life had elapsed when the complaint of which he died—hypertrophy of the heart—showed itself in an aggravated form, after having manifested its presence in his system for some twenty years. He was not, however, so ill at first but that he could undertake a journey, and it was hoped that a change of climate might do him good. Setting out for Washington—where he intended to be present at a meeting of the Regents of the Smithsonian Institution—he had reached the house of his brother in Chester, Pennsylvania, and was seized with an attack of disease during the ensuing night. Here he breathed his last, Wednesday, the 26th of February, 1862. His remains were removed to Cambridge, where a sermon on his death was preached, March the 9th, by Dr. Peabody, preacher to the university, and appropriate resolutions, in honor of his memory, were passed by the governing boards, the faculties, and others.

We have spoken of President Felton as a scholar and a worker, earnest and successful, in the field where Providence placed him. But the man is far more in the scale than the scholar. Let us then look for a few moments at the man in his traits of mind and character, and in the conduct of life.

His mind, as may have already appeared from what we have said of his scholarship, was a rounded, well-balanced, many-sided one, where no trait was deficient. Yet the predominance of the æsthetic faculty, with the attendant pleasure derived from art and the works of creative intellect, may have given that direction towards scholarship and belles lettres, towards the concrete form rather than the abstract metaphysical principle, which somewhat characterized him. His simple, correct taste, and his judgment, which estimated probabilities aright, and looked below the show and the surface, although, no doubt, cultivated by the study of language, and especially of Greek literature, must have had, beyond question, an independent natural foundation. He had a native curiosity and thirst for knowledge, which felt and grasped on every side; if you wanted to know about Jasmin, the Provençal Burns, he had read his poems, he could speak of the Finnish mythology, and in his later years especially he entered with zeal into the progress of natural science. Nor ought his keen sense of the ludicrous and his humor to be forgotten here, which made him the most entertaining of companions without undermining the manliness of his character. And the easy play of his faculties, working rapidly and smoothly, without jar or much effort, deserves especial notice.

Among the traits of President Felton's character may be mentioned kindness and sympathy, united with moral energy, courage and firmness in acting up to his convictions. His kindly nature showed itself in the forms of sociality, friendliness, and generosity reaching to self-sacrifice. His friendship extended widely beyond the borders of his way of thinking in religion and politics, and men of various opinions and convictions sought his companionship, and partook of his regards. Few men have had more friends or fewer enemies, and yet he never shrunk from avowing his own principles. He enjoyed society, of which, by his pleasantries and other colloquial powers he was made to be the life. "He was generous," says his friend Profes-

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sor Peabody, "to the last degree; no income could have made him rich, while there were the needy around him; and of time, more precious than gold, and of the wealth of intellect, he was no less lavish than of the inferior goods, which he prized only as the means of making others happy. The labor of hand and brain, which might have been employed in building up his own fame, was freely given to all who sought it. Many have been the literary works and enterprises with which his name was never connected, which owed a large portion of their merit and success to materials which he furnished, or to his advice, revision, or criticism." And the same friend bears witness to his sympathy with "every noble and generous work for human progress and well being."

If the stranger, after an evening's acquaintance, may have been led by Mr. Felton's companionableness and flow of mirth to regard him as wanting in moral earnestness, such a judgment would be pronounced hasty and superficial by the many grave and good men who gave him their friendship and respect. He by no means lacked any of those qualities which constitute the man of an earnest and dignified life. As has been beautifully said of him, "his force of character, hidden on ordinary occasions by his gentle and sunny temperament, appeared impregnable whenever it was put to the test." He had firm settled convictions and well digested rules of action; he had purposes which could not be shaken by other considerations than those addressed to the reason and conscience; he had a noble, manly courage which could carry him onward in the face of opposition. These qualities, with fidelity, uprightness, and simplicity of character, as displayed in his college duties, and in other relations of life, secured for him the esteem and respect of all.

The union of kindness and firmness with sound judgment and perspicacity made him an excellent college officer. But for his character as a ruler over students we will appeal again to what Dr. Peabody says of him: "I well remember the early years of his official connection with the college; his fraternal sympathy with the students; his gentle discipline when forbearance was safe and right; his reluctant, yet uniform consent to sterner measures, when the cause of order and virtue demanded them; his tender consideration for those who were struggling as he had struggled, bravely and honorably against adverse circumstances; his readiness to sacrifice his own ease in aid of those who sought to transcend the required measure of study, to furnish facilities for their researches, and to contribute from the funds of his own thought and learning for their growth in knowledge. Such was his course during his entire life as a teacher; and could we number up the youth who have been animated by his example, stimulated by the genial fervor of his enthusiasm, encouraged by his patient and unselfish devotion to their welfare, and sustained in their worthy ambition after they left these halls by persistent and effective friendship, we should have a record of quiet, unostentatious beneficence, that would distance and belittle many life-works of world-wide and long-enduring fame."

President Felton was in his feelings and opinions, like the greater part of scholars, a conservative, not without sympathy with forward movements in society but led by his tastes and acquaintance with the past to look with suspicion on sudden changes in the established order of things. In a similar spirit he showed no mercy towards what he regarded as false pretensions to science. It will not soon be forgotten with what zeal he followed up the spiritualists, putting their claims to the test, driving them from point to point, and exposing what he considered to be intentional fraud. In his political principles he may be described as a conservative whig, a friend and admirer of Daniel Webster. In his religious faith he was a Unitarian. Dr. Peabody characterizes him as "reverent and devout, loving the Word and Ordinances of God, meekly yielding himself to the teaching and leading of the Saviour, strong in the hope that is full of immortality."

He was twice married; the first time in 1838, to Miss Mary Whitney, who died in April, 1845, and again in September, 1846, to Miss Mary L. Cary, who survives him. He has left five children.

Such is a brief sketch of one of the recently deceased Regents of the Smithsonian Institution*—a man who, by his industry and vigor of mind, made himself; a man whose genial nature and social qualities created friends for him on every side; a man

* President Felton took a lively interest in the institution, and actively participated in the proceedings of the Board. His communications appearing in the reports of the Board are as follows: In the report for 1857, p. 79, a report on the present of a book from Greece; p. 82, one on the purchase of Stanley's Indian gallery; p. 88, one on Professor Henry's communication relative to the telegraph; and in the report for 1859, p. 104, a eulogy on Professor W. W. Turner, and, p. 106, one on Washington Irving. In addition to which he gave several lectures on Greece, and made a number of confidential reports on communications relative to linguistics, which had been referred to him for examination by the Secretary.

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who to the highest attainments in one department united in an uncommon degree a large and liberal acquaintance with the circle of knowledge; a man of fine tastes, of most kindly sympathies, of strict uprightness; a man who adorned his professorship by the best qualities of a teacher, and the mingled kindness and firmness of a wise disciplinarian, and who brought to the presidential chair of Harvard the firm purpose to raise the standard of that ancient University in everything that was good and noble.

Hon. Mr. Trumbull made some remarks relative to the late Judge Douglas, and offered the following resolutions:

Resolved, That in the death of the Hon. Stephen A. Douglas the Smithsonian Institution has been deprived of a most zealous friend; the Board of Regents of an active and attentive member; and the country of a distinguished and influential citizen.

Resolved, That the Board of Regents deeply sympathize with the bereaved relatives of the deceased, and that a copy of these resolutions be transmitted to them.

Resolved, That the Hon. S. S. Cox be requested to prepare a suitable notice of the Hon. S. A. Douglas, to be inserted in the Journal of the Board of Regents.

The resolutions were unanimously adopted.

EULOGY BY HON. S. S. COX.

In February, 1854, Stephen A. Douglas, of Illinois, while a Senator from that State, was appointed one of the Regents of the Smithsonian Institution, and continued a member of the Board until the time of his death, on the morning of the 3d of June, 1861. From the pursuits of his life and the peculiarities of his course, it might be thought that he was not well qualified to discharge properly the duty of a trustee of a fund intended for the increase and diffusion of knowledge among men. But this would be a mistake, for, although he had given no special attention to any branch of science, yet his mind was of that comprehensive cast which enabled him duly to appreciate the nature of the bequest and the general principles of the different plans which had been proposed for carrying it into execution. It is true, as I am informed, that before he was elected a Regent he had adopted the popular idea that the bequest was intended merely to diffuse useful knowledge among the people of the United States; yet when he came to study the precise words of the will of the founder, and caught, as he immediately did, the peculiar idea of the object intended, namely, the extension of the bounds of science, and not merely the teaching of what is already known, he fully adopted the views on which the present organization of the institution is based, and ever afterward continued a warm advocate and an able supporter of the measures now in successful operation for the realization of the liberal and enlightened intention of James Smithson.

In accordance with the usage heretofore observed in similar cases, a resolution having been adopted directing the preparation, for the proceedings of the Board of Regents, of a sketch of the characteristics and incidents of his life, and the duty of furnishing this having been assigned to me, I address myself to the task with an earnestness that is only tempered by my fear that I have neither sufficient time nor sufficient ability to do full justice to the memory of one whom I admired as a public man, and sincerely loved as a friend.

It is, indeed, pre-eminently fitting that the name of Douglas, so fondly cherished by the nation, and so familiarly spoken wherever American statesmanship is known, should be honored in the journals of this institution, for whose prosperity he evinced so earnest a desire. It was not merely as one of its Regents that he showed himself the true and enlightened friend of objects kindred to those of this establishment. He ever advocated measures which served to advance knowledge and promote the progress of humanity. The encouragement of the fine arts, the rewarding of discoverers and inventors, the organization of exploring expeditions, as well as the general diffusion of education, were all objects of his special regard, whether in the councils of his State, or in the hall of the Senate of the Union.

Stephen A. Douglas was born at Brandon, in Vermont, on the 23d of April, 1813. Like many, perhaps I should say like most, of the rural neighborhoods of New England, Brandon contained a highly intelligent and energetic population, independent alike in thought, speech, and the conduct of their public affairs; and doubtless the fact of his early years having been passed under the influence of the daily life and conversation of such neighbors, had some share in imbuing the boy with the sturdy

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independence and resolute energy which the man was so remarkably and so triumphantly to exhibit throughout his at once brilliant and laborious career.

His ancestors were of Puritan descent; and his father was a physician of both ability and reputation, but died at a prematurely early age, leaving his widow in very straitened circumstances, if not even in actual distress. It may, indeed, be only too reasonably feared that the latter was the case, for, excellent mother, as she was known to be, she yet was unable to give young Stephen the full education he so much desired and so well deserved. He attended the district school during only one-third of the year; during all except the four winter months he was engaged in the hard labor of a farm or in the shop of a cabinet-maker. In this alternation of manual labor and imperfect and interrupted schooling he continued until he was twenty years of age, when he migrated to Illinois, where he taught school for his support, while he resolutely studied law. In 1834 he was admitted to the bar, and we may judge of the character of his early efforts in the courts from the fact that in 1835, being then only twenty-two years of age, this young man, whose short life had been so largely taxed by adverse circumstances, was elected State attorney. From that time he was continually in the public service. He was, in turn, State attorney, member of the Legislature, Secretary of State, judge of the supreme court of Illinois, and registrar of the land office; and subsequently he was a member of the lower House of Congress, and three times in succession he was elected by his adopted State to be United States Senator; and, as is well known, not long prior to his death he was the very popular though unsuccessful candidate for the highest executive office in the gift of the nation.

These are the prominent points in the career of Douglas, whose life, commencing in obscurity and continuing through nearly the half of its whole duration under the most adverse circumstances, ended in the full light of high position, and the full glow of popular favor. The principles which he advocated, and to which he unwaveringly adhered, as well as the measures he proposed, have been the theme of both criticism and eulogy elsewhere, but the discussion of them here would be out of place, and in violation of a rule early adopted by the Board of Regents, that in the affairs of this institution partisan politics shall forever be unknown. The points, however, in his personal character which enabled him to obtain so important a position, and gave him so great an influence, not only over intimate friends and colleagues, but also over the public mind, may well claim our attention as a study no less important than interesting.

If continued success be the test of merit, then must all admit that Judge Douglas was no ordinary man. That success in a single effort, which may be referred to a fortunate concurrence of circumstances over which the successful man had no control, is not the true criterion of talent is a truth which must be readily admitted. But when the course of an individual is marked through a series of years by a continual advancement in the same direction, and especially when that advancement requires forecast, knowledge, perseverance, and energy, his success most assuredly *is* evidence of talent, if not of genius.

Courage, energy, and a working power, both mental and physical, which have rarely been surpassed, were the qualities which chiefly served him in his earlier years. The son of a poor widow, and compelled to spend in bodily labor the time which other boys of his age pass in school, he would probably have remained a poor and obscure individual had it not been for the resolute WILL to elevate himself, and the courage, force of character, and determination to ACT in accordance with that will which characterized his whole life. But of itself alone, that seemingly inexhaustible power of labor which obtained for him the suggestive sobriquet of "the little giant" would have been insufficient to effect the great success which he actually achieved, had it not been directed and aided by other mental characteristics, which some even of the warmest admirers and eulogists of the *politician* Douglas seem to me very insufficiently to appreciate.

In addition to the characteristics which I have already attributed to him, Judge Douglas was remarkable for his quick perception of the nature of events, and of the consequences which, with almost mathematical precision, he could predicate as to their results. He had, to a wonderful degree, the power of seizing on general principles, and of making them a part of his intellectual stores to be referred to in whatever particular case he might have to deal with; and his retentive memory enabled him on the instant to call up alike a general truth, and a host of particular facts in effective illustration of his premises.

These qualities might have been modified, but could not have been increased, or even strengthened, by classical training; nay, in becoming more refined and fastid-

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ious, it is far from certain that his mind would not, at the same time, have become less robust, energetic, and bravely self-reliant.

We do not intend by this remark to throw doubt on the importance in general of that early mental discipline which is furnished by the training of the schools, but to present the suggestion that in particular cases of extraordinary native vigor of intellect, determined on a single line of action, the gifts of nature cannot be essentially improved by the moulding influence of ordinary early education. These cases are, however, the exceptions to be avoided in directing the minds of youth, and not the examples of the rule to be generally followed.

Although Judge Douglas was no scholar in the pedantic signification of the term, yet his mind was duly cultivated in the study of the law, a branch of knowledge which, when pursued merely in its details and practiced in its daily routine of office forms, may tend to obscure the perception of truth in frequent endeavors to make the worse appear the better cause, is yet in its proper study, through the expositions of Blackstone and the other systematic writers on English jurisprudence, one of the most liberalizing and enlarging pursuits to which the mind of youth or early manhood can be directed. The generalizations of this branch of knowledge were particularly fitted to improve the mind of young Douglas, and to prepare him for his future career.

But even the intellectual qualities we have mentioned are insufficient alone to account for the distinctive character of the eminence he attained. With these he might have been the dexterous pleader, the sagacious judge, the acute politician, and yet have fallen very far short of that perfect empire which he held not only over the minds of the few, but also over the hearts of the many. He had other qualities which may be cultured, but which cannot be created.

The lively sympathy with friends and associates, the intelligent and appreciating glance, the frank and hearty tone, the kindly grasp of the hand, the prompt and obviously disinterested service, these give to him to whom they belong a despotism which we are, perhaps, too proud to own, but which we cannot, if we would, resist. In the mere personal presence of Stephen A. Douglas there was a singular fascination. When you had once experienced the magic of his influence you were bound to him forever; his spirit seemed to dare you to rebel, and what was commenced by admiration for his commanding ability was consummated by his kind and genial manner. Bold, fierce, at once haughty in defiance and dexterous in fence, he necessarily commanded admiration. But to admire is little else than to wonder; we admire a brave and gifted enemy quite as much, and, if a little terror be mingled, we may admire him even more than our true but less brilliant friend. But in the case of Douglas we loved while we admired. And this is the true key to his general popularity. His intellect conquered, but his heart secured the conquest. His innate and ineradicable kindness, and his genial manner conciliated all who fell within the influence of his power. His political and public life exhibited but the mere outward husk of the man within; it was when you looked upon the gentle amenities of his home life, upon his love and devotion to his wife, tenderness to his children, and respectful attention to his friends, that beneath that somewhat rough exterior you could discern the character it concealed.

It will not, I trust, be considered improper for me to refer to the fact that I was one among the many young men of the west who were honored by his confidence and bound to Judge Douglas by ties of enthusiastic friendship, and that therefore I speak from personal experience when I refer to the magic of his presence and the controlling influence of his character.

As I have already said, this is not the place or the occasion for entering into particulars as to his political opinions and acts, but, alike to his friends and his foes, I must say from the convictions of my head, as well as the suggestions of my heart, that history will be false to her trust if she does not record the fact that Douglas was a true patriot as well as a sagacious statesman. If he was a partisan politician, he never wore his party uniform when his country was in danger. It was a striking illustration of his character in this respect, that when the administration of our national affairs was committed to his political antagonists, he gave his hearty and generous support to the Government at the moment it required his aid.

Some have lamented his death as untimely and unfortunate for his own fame, since it happened just at the moment when the politician was lost in the patriot, and when he had an opportunity to atone for past errors. But man does not change his nature so readily; Douglas was the same from the beginning to the end of his career, with views merely modified or enlarged by the expanding horizon which opened upon him from year to year, in his increasing elevation of thought and position. The words

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which escaped him in his last hour were the expressions of the real sentiments of his inner life.

Observant of the causes which have led to our present civil war he ever strove by adjustment to avoid their disastrous effects. "I know not," said he, "what our destiny may be, but I try to keep up with the spirit of the age, to keep in view the history of the country, to see what we have done, whither we are going, and with what velocity we are moving, in order to be prepared for those events which it is not in the power of man to thwart."

Placed at the head of the Territorial Committee of the Senate, it was under his direction that Territory after Territory and State after State were admitted into the Union. The comprehensiveness of his views was exhibited in his great speech on the Clayton and Bulwer treaty, on the 4th of March, 1853, wherein he enforced a continental policy and refused to prescribe limits to the area over which the principles of our Government might safely be extended.

His position on the Committee of Foreign Relations gave him a breadth of view in regard to our relations with other countries, which was enlarged by personal observation in foreign travel, and in special historic research. His knowledge on this subject was conscientiously applied in the way which he deemed best fitted to advance the commercial and financial interests of our whole country.

He died in the midst of the people of a district where he had been cherished and honored during the whole of his public life; in a city whose commercial and material improvement was the pride of his heart, and a type of his own character. The maturity of his growth, the fertility of his resources, and his sturdy energy, rendered his life a microcosm of the great section of our country with which he was so closely identified. We may toll the slow bell for his departed spirit, we may drape ourselves in the emblems of grief; but if his friends and admirers would truly honor his memory, they will endeavor, like him in his last days, to moderate the heat of party strife, enlarge their views of political science, and emulate his growth in moral character and clear-sighted patriotism.

The Secretary stated that during a recent visit of Rev. Francis Vinton to Washington he had obtained from him some additional facts relative to the Wynns estate, of which the Smithsonian Institution is the provisional legatee.

Mr. Thomas Wynns, born in North Carolina, resided for a long time at Grand Turk, Turk's Island, where he accumulated a considerable fortune, and married at an advanced age Charlotte Arthur, a daughter of John Arthur, a woman much younger than himself. He afterwards removed to Brooklyn, New York, where he died about 1851, leaving his widow and one child, a daughter. To the former he bequeathed a life annuity of $1,500, and to the latter his whole estate, subject to the foregoing annuity. In case of the death of this daughter without issue, the estate, now valued at from $60,000 to $70,000, is bequeathed to the Smithsonian Institution. The property is securely invested in bonds and mortgages, and is under the care of Edw. Coffin, now residing in London, and Rev. Francis Vinton, of Trinity Church, New York, as trustees. The accounts are rendered to the surrogate of Kings county, New York.

After the death of her husband, Mrs. Wynns returned to the West Indies and married Captain Anderson. She now resides with her daughter, Charlotte Arthur Wynns, in England. The latter is about seventeen years of age.

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The Secretary gave an account of the circumstances connected with the money left in England by Hon. Richard Rush, as the principal of an annuity to the mother of the nephew of Smithson, and presented the following communications from Fladgate, Clarke & Finch, of London:

40 CRAVEN STREET, STRAND,
LONDON, W. C., *May* 16, 1861.

SIR: We had the honor, in the year 1838, of acting professionally for the President of the United States in the suit in the English court of chancery, under which the funds for the foundation of the Institution (of which we address you as the manager) were decreed to be paid over to him for the purpose of establishing the institution. We have now to make to you, as the manager thereof, the following communication:

On referring to the papers connected with the institution you will find that a sum of £5,015 three per cent. consols, part of the estate of Smithson, the founder, were retained in the court of chancery to answer a claim of one Madame de la Batut. That person was, in fact, entitled to a life interest in the fund, and at her death it was to revert to the President as an additional fund for the purposes of the institution.

Madame de la Batut is now dead, so that the fund has become transferable to the President, and it will be requisite for him, or some person duly authorized by him, to take the necessary steps to obtain a transfer.

We have had some communication with the solicitor of the lady's family, who writes as follows:

"My client, Mr. La Batut, upon taking out administration to his late mother, Madame La Batut, to whom Lieutenant Colonel Henry Lewis Dickinson, by his will dated 17th July, 1819, gave half of the income of his property, for her life, will be entitled to an apportioned part of such income from the last payment, on the 22d March, 1858, to 10th September, in the same year, which would amount to about £70.

"The property originally consisted of French 5 per cent. rentes, payable 22d March and 22d September, but by order of the court a sum of £5,015 three per cent. consols was invested in the name of the accountant general in this suit, to the separate account of Mary Ann de la Batut, the annuitant, to meet the payments of the life income. By the law of France the life income is apportionable and payable up to the time of death, and Lieutenant Colonel Dickinson having been domiciled in France at the time of his death, that law will apply to this case.

"Will you be good enough, under these circumstances, to obtain the consent of your client in presenting a petition as to the £5,015 and the arrears of dividends due thereon, to ask for the payment to my client of the apportioned sum out of such arrears, without obliging him to go to the expense of proving the law of France upon this subject. I will hand you the necessary proof of death, the expense of which can be included in the necessary costs of the application."

We should recommend that the request contained in this letter be complied with.

We have the honor to be, sir, your most obedient servants,
FLADGATE, CLARKE & FINCH.

To the SMITHSONIAN INSTITUTION,
Washington, U. S.

40 CRAVEN STREET, STRAND,
LONDON, W. C., *October* 26, 1861.

SIR: Your letter of the 14th August reached us in the long vacation which has just terminated, and we hasten to reply to it.

All that will be requisite to be done in the first instance is, that we should have the authority of the President of the United States to present a petition for an order to have the fund paid to him. On our obtaining this order, a power of attorney will be sent out to the President authorizing some person here to receive from the court of chancery, and transmit to him, or to the managers of the Smithsonian Institution, the fund in question.

Having in the suit had the honor of acting for the President, it might be within our functions to present the petition even without an express authority, but we did not deem it right to do so without some communication with the President or with the managers of the Institution.

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Of course, although the order might be obtained without, the fund can only be dealt with on the signature of the President.

We have the honor to be, sir, your very obedient servants,

FLADGATE, CLARKE & FINCH.

JOSEPH HENRY, Esq.,
Smithsonian Institution, Washington.

On motion of Mr. Trumbull, it was

Resolved, That the Secretary and Executive Committee consult with the President of the United States and take such action as may be necessary for obtaining the money referred to in the communication from the solicitors in London.

The Secretary stated that Congress had passed a joint resolution granting to the institution a set of the volumes of the United States Exploring Expedition.

The Secretary gave an account of the organization of the "Establishment," and stated that although he had regularly given notice to the members, no meetings had lately been held.

The Secretary presented the manuscripts, maps and collections of the expedition to the Arctic regions of Dr. I. I. Hayes, which were referred to Professor Bache.

The Secretary made a statement relative to the system of international exchange conducted by the institution, and presented the following letter:

HAMBURG AMERICAN PACKET COMPANY,
NEW YORK, *October* 21, 1861.

DEAR SIR: In reply to your favor of October 18, we beg to state that we shall be most happy to accommodate the Smithsonian Institution in furthering the wishes you express, and take on freight, free of charge, any packages which you desire to ship, be they specimens of natural history, books, or other articles desired to be forwarded to Germany or the continent of Europe, irrespective of bulk.

Very respectfully, yours,

KUNHARDT & CO.

On motion of Mr. McPherson, it was—

Resolved, That the thanks of the Board of Regents be presented to the "Hamburg American Packet Company," for their liberal co-operation in assisting to advance the objects of this institution.

The following letters were presented by the Secretary as illustrations of the *correspondence* of the institution:

CHATEAU OF ECLIPENDS,
CANTON DE VAUD, SWITZERLAND, *January* 17, 1861.

SIR: I beg you to express to the institution, of which you are the Secretary, my sincere thanks for the remittance which you have just made me of three volumes of your reports. (Annual Reports of the Board of Regents of the Smithsonian Institution, 1856, 1857, 1858.) The learned memoirs contained in these volumes possess great interest for me, and I am happy to testify my sense of your kindness.

Together with this letter I have forwarded to Dr. Flügel, at Leipsic, five copies of a volume, which I have but just published, on the "Lacustrian Habitations of Ancient and Modern Times." (XVII plates, 380 figures.) I would ask the favor of you to accept a copy for the Smithsonian Institution, as a slight testimony of my high appreciation. As regards the other four copies, you will confer a sensible obligation on me if you will present them, in my name, to such scientific societies of the United States as you may deem most interested in researches of this kind.

I have had the satisfaction of sending you heretofore some communications on the

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lacustrian habitations of Switzerland. Since then these researches have been prosecuted with success, and we are beginning to make discoveries of remains of the same kind in Wales, Germany, Scotland, and elsewhere. Africa, Asia, and Oceanica present similar constructions. The floating gardens of Mexico are referable to the same usages, and it would appear to me that you must have in your own lakes remains similar to those of Switzerland. It has seemed to me important that the discoveries of this kind made in Europe should be grouped together in one work, with the historical results which may be deduced from them. You will readily perceive, at the same time, that it is not the history of the race which is alone concerned in these inquiries, but that the natural sciences have also an important interest in them. I would venture, then, to recommend to your favorable attention and to that of your honorable colleagues a labor whose interest is by no means confined to the boundaries of Switzerland.

Be pleased, sir, to accept the assurance of my high esteem and entire consideration.

FRED. TROYON.

To the SECRETARY OF THE SMITHSONIAN INSTITUTION.

LAUSANNE, *January* 7, 1862.

SIR: I have to acknowledge the receipt of your letter dated July 18, 1861, and of a copy of my paper on *archæology*, which has appeared translated in the Institution's report to Congress, printed in 1861. It is a great honor which has thus been conferred on my little tract, and I hereby express my sincere thanks for the favor. The translation is, as you remark, rather literal, but it is wonderfully correct, as far as the sense is concerned, and this is the capital point. In due course of time I hope to publish some more papers on the same subject, and I shall not fail to communicate them to the institution.

The United States are at present going through a crisis which, for the moment, cannot be favorable to scientific pursuits. Let us hope that Providence will so lead matters that the final result shall turn in favor of the great and noble cause of liberty and of progress. Switzerland has seen sad times of intestine discord and of ferment from 1830 to 1847, when a short but decisive civil war settled the question, and now we are enjoying a state of prosperity such as we never knew before. May a similar fate await your own country.

As you mention that some more copies of my paper might be sent to me, I take the liberty of letting you know that they would be very acceptable.

Believe me, sir, to be yours, very respectfully,

A. MORLOT.

The SECRETARY OF THE SMITHSONIAN INSTITUTION.

ST. PAUL, MINNESOTA, *August* 13, 1861.

SIR: A friend of mine, Mr. Byron M. Smith, tells me that on the occasion of a short sojourn in Washington last winter he paid a visit to the Smithsonian Institution, and, amongst other things, understood that there was in preparation, under your authority, a general map of the aboriginal or other earthworks of North America.

As this is a subject in which I have always taken a great interest, I shall be pleased to assist in the compilation of such a map. If I can be informed by the draughtsman of the *scale* intended, I will forward a correct geographical outline of the country between Lake Superior (west end of) and the Missouri river. On a map sent to-day by mail, I have marked in red the localities of such groups of *small mounds* as exist to my knowledge. Although these works are utterly insignificant when compared with those of Ohio and Wisconsin, yet a knowledge of their exact localities may be useful in connection with inquiries in reference to the movements and history of the modern tribes.

Respectfully, sir, your obedient servant,

ALFRED J. HILL.

Prof. JOSEPH HENRY, *Washington, D. C.*

ROYAL ACADEMY OF MORAL AND POLITICAL SCIENCE OF MADRID,
MADRID, *July* 16, 1861.

This Royal Academy, being impressed with the fact that nothing contributes more efficiently to the advancement and propagation of moral and political science than a frequent communication with persons devoted to its cultivation, has resolved to invite

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to a reciprocal correspondence all the principal learned bodies, whether national or foreign, whose studies or investigations are analogous to those of this institute.

As this academy is the most modern it is proper that it should propose the commerce of the ideas and theories necessary to the progress of moral and political science. And it does not hesitate an instant in sending to your institution the account of its own commencement and organization, as well as the publications that have marked its short life.

The credit which your institution has acquired for taking so much interest in all that favors the advancement of civilization and improvement of the people, inspires the academy of Madrid with confidence that its wishes will be accomplished, and that the illustrious body to which it directs itself to-day will honor it with its correspondence, and accept the exchange of memorials or other works which have been or will be published in future.

MANUEL GARCIA,
Acting President.

By order of the Academy.

PEDRO GOMEZ DE LA SERRA,
Secretary.

The SMITHSONIAN INSTITUTION.

MEXICAN SOCIETY OF GEOGRAPHY AND STATISTICS,
MEXICO, *February* 18, 1862.

DEAR SIR: After some delay this society has received your letter and the accompanying books.

The society desires me to return sincere thanks, and to say that it fully appreciates the generous offer that you make in the name of your institution.

Our society accepts your propositions. It will soon send, in the manner that you suggest, some of its literary and scientific productions, and also those of the other learned bodies whose works you ask for. It will also take care to put in the hands of the agent you refer to, all the periodical publications as they appear.

With the highest consideration, &c., I remain,

D. V. GUADALOUPE.

The SECRETARY OF THE SMITHSONIAN INSTITUTION.

KOENIGSBERG, *November* 23, 1861.

SIR: I have the honor to apprise you of my return from England, and the result of my labors in the interest of the Smithsonian Institution; but I must first tender my thanks for having been enabled to pursue the study of American Neuroptera, to be found in English collections or described by English entomologists.

I must say that my harvest was pretty good, for in most cases I was able to remove the doubts left in my preceding work. In the collections of the British Museum, especially, I found the types of species I did not know, and some also in the collection of Mr. Westwood, at Oxford, and Mr. Saunders, in London. I hope that with these new species, received after having sent my manuscript to Washington, I can make a tolerably large supplement. But the extent of this supplement and the comparison of species already described by me will require considerable time. I therefore believe it will be more convenient to have my work published as soon as printed, and to give afterwards the novelties and corrections in a separate supplement, which will probably make a pamphlet of about eight to ten sheets. You may rest assured, sir, that I shall endeavor to perform this labor as soon and as well as possible; but since I cannot always dispose of my time, I fear, considering the extent of the labor, that it cannot be done before six months.

I find that the translation, the first eighteen sheets of which I have seen, is of perfect accuracy. Unfortunately the work itself leaves much to be desired. I must, however, consider it a consolation that for a first attempt I have attained so much, and that my work may serve as assistance to further and more fruitful researches of the entomologists of your country. I would be gratified if my, so imperfect, labor should call forth numerous rectifications and augmentations from American naturalists. At any rate the interest for the advancement of science will always urge me on to make the synopsis better and better.

I have the honor to remain your devoted,

H. HAGEN.

Prof. HENRY, &c., &c.

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The following letter is given as an illustration of a number of a similar character received relative to the distribution of specimens:

HAMILTON COLLEGE, N. Y., *February* 1, 1862.

DEAR SIR: I presume the president of our college has officially acknowledged the receipt of the box of shells sent us last month from the Smithsonian Institution. We consider this donation a valuable addition to our collection, and our local papers have given very favorable notices of it. When we arrange the shells in our cabinet we intend to have printed on each ticket "From the Smithsonian Institution."

We shall be glad to receive any other objects of natural history of which you have duplicates to spare. *Skins of birds, &c., botanical specimens, fossils,* and *minerals* will be acceptable; also, relics of our Indian tribes. We have a good collection of Indian antiquities mainly derived from the ancient seats of the Iroquois, and we should like to improve our collection by adding specimens from the western Indians.

Yours respectfully, &c.,

O. ROOT.

Prof. JOSEPH HENRY.

OTTAWA, CANADA, *March* 10, 1862.

MY DEAR SIR: I have to-day received your valuable donation of books, for which I beg to return my most sincere thanks, both to you and also to the institution you so ably represent. They are, indeed, a most valuable addition to my small stock, and are all the more so from the fact that they were totally unexpected.

A great debt of gratitude is due by the world at large to the munificent founder as well as to the enlightened gentlemen that control the Smithsonian Institution, for the great service rendered to the cause of science by the distribution of such works as those you sent me. How many thousands are there who, although they have an earnest desire for scientific and useful knowledge, are, for the want of such works as these, unable to obtain it? As one of these, allow me again to tender my most grateful thanks for your kindness.

Believe me, dear sir, yours respectfully,

J. ARTHUR CODD.

Prof. JOSEPH HENRY,
Smithsonian Institution, Washington.

NEW HAVEN, *March* 27, 1862.

MY DEAR SIR: I have only time to make a few suggestions in reference to your letter.

It is very difficult to make out a list of mineral species at present. The most trustworthy authorities on the subject are Haidenjer, Kennjott, and Rammelsberg.

I think that the names, consisting of a single word, should be adopted. Where this was bestowed by the discoverer (author) of the species, I think his name should follow in small capitals; but in italics only, provided he merely changed the name from a chemical one, or a long, inconvenient compound designation, to a single one.

The well-settled species might be given in rather large capitals; those which are less settled, but at the same time probable, in smaller capitals, while the rest may appear in small type.

I object to the plan of pasting printed or even written names on specimens. It is nowhere followed in the great collections abroad. It might answer in the case of large rock specimens and fossils, but all mineralogists would exclaim against it upon choice specimens, many of which, as the single crystals, would be concealed by the application. Indeed they very rarely use printed names at all, but instead employ elegantly written cards, each label costing about 12 or 15 cents. It would certainly confer an advantage upon our public cabinets if you would strike off sets of labels of all the important species upon thick card-paper, which might, as required, have the localities inserted with the pen. This would give uniformity to our museums, and prove extremely useful.

I would suggest that before distributing your duplicates, you retain them for six months in order to permit exchanges for things needed by your collection; such exchanges to be made at Washington. Afterwards the duplicates should be given to each of the States.

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I shall be very happy to form an exchange of meteoric specimens, in order to obtain a supply of your St. Rosa (New Mexico) iron.

I am very glad you intend to bring the minerals into order. Many valuable contributions will thus be secured.

Excuse the haste in which I write, and believe me, very truly yours,

C. A. SHEPARD.

Professor HENRY.

UNIVERSITY COLLEGE, TORONTO, *January* 31, 1862.

DEAR SIR: At the request of the faculty, students, and board of curators of Knox College, the theological institution of the Canada Presbyterian Church, I have ventured to write to you on the subject of our museum.

We are anxious, by an energetic and united effort, to accomplish three things.

1. To awaken throughout the country an interest in the world of nature.

2. To collect, as far as possible, specimens illustrative of all the zoological, botanical, and mineralogical species of Canada. We think that the solution of several important scientific problems—the northern limit of species, &c.—are involved in this. The ground is being gradually occupied. The Geological Survey, the Botanical Society, the Montreal Natural History Society, the Canadian Institute, &c., are all doing their share in the work of research; but there is a wide field still open.

Our third object will be to supply societies, museums, &c., with specimens from this country. In doing this we shall always bear in mind the fact that the Smithsonian is the great central institution for the continent, and that in no other way can our ultimate object be so well attained as by working with you.

A part of our scheme was to issue circulars giving information on the best methods of procuring, preserving, and forwarding specimens.

Could you furnish us with three hundred copies of your "Directions?" We will, with your permission, append a short circular stating our plan and appealing to the people to join with us in carrying it into execution, and then without delay try to put them all into the hands of parties who will make a good use of them. Please aid us all you can in the matter. We have just enough of articles on hand to form the nucleus of a good museum; for the rest we look to the future—to your kindness and to the blessing of nature's God on our exertions. If you can spare the pamphlets we will gladly remit whatever you value them at.

Thanking you most earnestly, dear sir, for the reports and catalogues, I have the honor to be, yours, very truly,

JAMES HUBBERT,

Secretary Board of Curators, Knox College Museum.

Prof. JOSEPH HENRY, LL.D.,

Secretary Smithsonian Institution.

ROYAL HORTICULTURAL SOCIETY,
SOUTH KENSINGTON, W., *December* 21, 1861.

DEAR SIR: I am requested by the Secretary, while acknowledging the receipt of your letter of October 18th, to acquaint you that the council have much pleasure in acceding to the request that this society's journals should be sent to the various institutions therein named, with a view to interchange. A parcel will therefore be sent to Mr. Wesley in a few days for transmission to you.

I am, dear sir, yours faithfully,

HENRY J. DOWDEN.

JOSEPH HENRY, Esq., *Washington.*

COBOURG, CANADA WEST, *April* 1, 1862.

MY DEAR SIR: I take this opportunity for expressing my warmest thanks for your repeated kindness in furnishing me with so many valuable publications on the insects of this continent, without the aid of which my progress in the study of entomology would be but slow and difficult. I can speak for others in this country, as well as for myself, when I say that we are deeply grateful for the assistance we have received from your noble institution; and that but for its liberality the natural sciences would have hardly made what advancement they have in this country during the past few years

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I shall be only too glad to reciprocate your kindness to the best of my ability by furthering the objects of the institution in any way that lies in my power.

I remain, my dear sir, very gratefully yours,

CHARLES J. BETHUNE.

Professor JOSEPH HENRY, LL.D.,
Secretary to the Smithsonian Institution.

HONOLULU, SANDWICH ISLANDS, *February* 10, 1862.

DEAR SIR: I am in receipt of your favor granting me a suite of the duplicates of the shells of the northwest coast of America in the hands of Mr. Carpenter.

I had, a short time previous to the arrival of your letter, forwarded to the institution a package containing shells and rare crustacæ, not included in my remittance to you two or three years since.

It is my intention to supply you a full suite of the mollusca of our islands, including typical specimens of those described by myself, and also one to Mr. Cumings, of London, whose collection I learn from Dr. Gray will be eventually added to the British Museum.

I venture to ask of you an addition to my library, of the Reports of the Smithsonian Institution. I have purchased the "Contributions to Knowledge," but the reports are not on our islands. One in particular I am wanting, which I learn contains a catalogue of transactions or proceedings of scientific societies; also a few copies, say half a dozen of the check list of the shells of North America, published by the institution. Should you be pleased to furnish me the above, be so good as to forward them to Bailliere Bros., New York city, who send me a box of books every few months.

I have been attempting to invent a simple apparatus for the measurement of the tides at our islands, but do not succeed very well. Natives cannot be depended on for watching any such instrument. It should be self-registering. I am satisfied that a register of winds should be kept in connection with it, and perhaps also a barometrical one. If you take any interest in such researches I would be pleased to hear from you in regard to them as to assistance or advice.

I remain yours truly,

W. H. PEASE.

Professor JOSEPH HENRY,
Smithsonian Institution.

[NOTE.—Dr. Bache, of the Coast Survey, has lent Mr. Pease a tide gauge on the responsibility of this institution.]

CIRCULAR OF THE INSTITUTE OF RUPERT'S LAND,
ASSINIBOIA, *February*, 1862.

We announce this institute to the public, knowing our many disadvantages, but still with a lively hope that our labors will be rewarded with some good results. Our numbers are small; but we have among us many who will devote the greater part of their time to collecting and observing, and these, with their admirable opportunities, cannot fail to accomplish much good work. Already we have the nucleus of a library. Specimens are coming in faster than we can take care of them. Necessaries for collecting and observing are being distributed and communications have been received.

We will shortly be presented with £150, by the friends and admirers of Sir George Simpson, for the purchase of a "Simpson" telescope, and £60 from the friends of the late much esteemed Dr. Bunn, for the purchase of achromatic microscopes. And now, with this commencement, we feel the right, and do ask for countenance and assistance from scientific men and societies in all countries, promising, in return, all that energy and zeal can do in the cause of science.

A prospectus accompanies this circular, giving all the necessary information, and we would ask communications from all to whom those are sent, with any requests, observations, or information by which we may benefit them, or they us.

WILLIAM MACTAVISH,
JOHN SCHULTZ,
Secretaries.

The SMITHSONIAN INSTITUTION.

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WASHINGTON, D. C., *March* 27, 1862.

SIR: In compliance with your suggestion, I beg to set before you a few facts respecting Liberia College, in the republic of Liberia, West Africa.

1. The college is the offspring of the benevolence of citizens of Massachusetts who, in 1850, organized themselves into an association for educational purposes in Liberia, with the title of "Trustees of Donation for Education in Liberia," and an act of incorporation was obtained the same year from the Legislature of Massachusetts.

2. Their sympathy and exertions have been so generously seconded that the trustees have been enabled to erect a capacious and substantial building on the heights of Monserrada, in the city of Monrovia, the capital of the republic. The college building is three stories in height, with piazzas surrounding it; with dormitories capable of accommodating between thirty and forty students, apartments for two professors and their families, lecture and dining rooms, chapel, &c. This building, the material of which is brick, cost nigh $30,000, and is now finished. The college building has been presented, as a gift, to the republic of Liberia, for a *national institution*, and is to be governed by a body of Liberian trustees, nominated by the President of the republic, and elected by the senate.

3. Besides the above expenditure, that is for the building, the "Trustees of Donations," &c., have, under their own control, at interest, an endowment of about $30,000, and a sum of about $40,000 has been left in legacies, for the purposes of Liberian education, and is under the control of other colonization societies, which will, without doubt, be ultimately appropriated to the ends of the Liberia College. A further sum of $50,000 is promised for the Liberia College by the several members of an eminent family in New York, in lieu of a like sum left by their father on his decease, for the college, but which was lost by a legal decision.

4. Liberal donations of minerals and large gifts of books have been made to the college, both by distinguished individuals in this country and by Harvard and Yale Colleges.

A faculty has already been elected; two of its professors inaugurated; and the college has already, this year, commenced operations.

The undersigned, authorized by the *American* trustees for the purpose, respectfully requests the addition of the publications of the Smithsonian Institution to the collections already made for the Liberia College.

I am, sir, your obedient servant,

ALEX. CRUMMELL.

Prof. HENRY.

Recommendation of Shea's Indian Linguistics, Referred to in the Secretary's Report.

We recommend Mr. Shea's series of grammars and dictionaries of the Indian languages to the attention of the Smithsonian Institution, and think that a subscription which will insure the continuance of the series will be eminently within the scope of the foundation, by preserving a number of rapidly perishing monuments of human knowledge, and securing to posterity, in the languages of the native tribes, the surest clue to their origin and affinities.

E. B. O'CALLAGHAN.
JNO. V. L. PRUYN.
S. B. WOOLWORTH.
JARED SPARKS.
GEORGE LIVERMORE.
GEORGE H. MOORE.
GEORGE W. RIGGS, JR.
PETER FORCE.
GEORGE GIBBS.

Mr. Shea's Account of his Library of American Linguistics.

With the increasing interest felt in the science of ethnology, much attention has of late been given to the study of the languages of the aboriginal tribes of America, and it must be confessed that more philosophical research, talent, and investigation have been bestowed upon them in Germany than in our own country. Yet the science is still in its infancy. Relying on crude or hastily taken vocabularies, which often confound different languages, many have set on foot theories, and entered into criticisms, which fall to the ground on the examination of a carefully prepared grammar or dictionary of the language. Fortunately, of very many American languages such works exist, often the labor of early missionaries, whom a long residence with a tribe, a knowledge of their habits, manners, and usages, enabled to write with accuracy and judgment.

Very few of these works were printed. Most have remained in manuscript, and

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are liable to perish by accident. Every investigator knows that many which survived till a few years since are now irrecoverably lost.

The language of a tribe is its most important relic. The mechanical arts were rude, and the remains so scanty, that mound and bone pit, and deserted village, have given us scarce a clue to the history of the peoples to whom they belonged, But language is the great key to the affinities of the tribes, and often enables us to trace their migrations, and in all cases to determine their kindred.

We owe it to posterity to allow the work of destruction to go no further, and to put in a permanent form every work now in manuscript, giving the grammatical structure or a full vocabulary of an Indian dialect. Our national honor is interested, and the learned abroad even now begin to wonder at our indifference.

Impelled by a desire to save these works, I began a series of them, printing a few copies of each, from the original manuscripts, my object being to preserve them; and six grammars or dictionaries of different tribes have already been issued. So much, however, is yet to be done, that I appeal to the public libraries, the historical societies, and literary institutions of the country, as well as to ethnologists, here and abroad, to aid me, by subscribing to the series, as the greater the number of subscribers, the lower the works can be afforded, and the greater the number of volumes that can be issued.

The works are handsomely printed on good paper, and carefully edited, forming a series of royal 8vo. volumes creditable to any collection.

NOW READY.

1. A French Onondaga Dictionary. From a manuscript of the seventeenth century ---------- $4 00
2. A Grammar of the Selish, or Flathead Language. By Rev. G. Mengarini ---------- 4 00
3. A Grammar of the Heve (Sonora) Language. Edited from a manuscript of the seventeenth century. By B. Smith, Esq. ---------- 1 00
4. A Grammar of the Mutsun (California) Language. By F. Felipe Arroyo de la Cuesta ---------- 2 50
5. A Grammar of the Nevome (Pima) Language. Edited from a manuscript of the seventeenth century ---------- 4 00
6. A Grammar of the Yakama Language. By the Rev. M. C. Pandosy --- 2 50

IN IMMEDIATE PREPARATION.

7. A Vocabulary of the Sextapay (California) Language. By Padre B. Sitjar.
8. Vocabularies. Collected by the late W. W. Turner.
9. Maillard's Grammar of the Micmac Language.
10. Arroyo's Vocabulary of the Mutsun.
11. Potier's Radical Words of the Huron Language.
12. Bruyas' Radical Words of the Mohawk Language.
13. A French-Illinois Dictionary.
14. Potier's Huron Grammar.
15. Lefevre's Vocabulary of the Montagnais Language.
16. Bruyas' French-Mohawk Dictionary.

Various others will be added, and, if encouragement is given, the series will include an English translation of Molina's "Mexican Dictionary."

JOHN G. SHEA,
83 *Centre street, New York.*

The volumes of the series may be ordered of Trübner & Co., London; Charles Reinwald, Paris; B. Hermann, Leipzig.

The Board of Regents, having examined the library, collections, museum, &c., adjourned *sine die*.

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JOURNAL OF PROCEEDINGS

OF

THE BOARD OF REGENTS

OF

THE SMITHSONIAN INSTITUTION.

WASHINGTON, *January* 21, 1863.

In accordance with a resolution of the Board of Regents of the Smithsonian Institution, fixing the time of the beginning of their annual session on the third Wednesday of January of each year, the Board met this day in the Regents' room.

Present: Hon. H. Hamlin, Vice-President of the United States, Hon. W. P. Fessenden, Hon. S. Colfax, Hon. S. S. Cox, Hon. E. McPherson, and the Secretary.

Several members being absent on account of a severe storm, the Regents devoted the meeting to the examination of the building, museum, library, and collections.

The Board then adjourned, to meet on Saturday, January 31, 1863.

WASHINGTON, D. C., *January* 31, 1863.

An adjourned meeting of the Board of Regents was held this day, at 11 o'clock a. m. Present: Vice-President Hamlin, Hon. L. Trumbull, Hon. G. Davis, Hon. S. S. Cox, Professor A. D. Bache, the treasurer, Mr. Seaton, and the Secretary.

The Vice-President was called to the chair.

The Secretary announced the death of Hon. James A. Pearce since the last session of the Board, and stated that Hon. Garrett Davis, who was present, had been appointed a Regent by the President of the Senate to fill the vacancy.

Professor Bache, after a series of appropriate remarks, offered the following resolutions, which were unanimously adopted:

Resolved, That the Board of Regents of the Smithsonian Institution deeply mourn the loss of their distinguished fellow-regent, James Alfred Pearce.

Resolved, That in the death of Mr. Pearce our country has lost a refined and influential citizen, the Senate of the United States an able, judicious, honest statesman, and this Institution an active, intelligent, and learned regent.

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Resolved, That we sincerely condole with the afflicted family of Mr. Pearce, and offer to them our heartfelt sympathy in their great bereavement.

Resolved, That a copy of these resolutions be communicated by the secretary of the Smithsonian Institution to the family of the deceased.

On motion of Mr. Trumbull, it was

Resolved, That Professor Bache be requested to furnish a copy of his remarks in relation to Hon. J. A. Pearce for insertion in the journal of the Board of Regents.

The Secretary announced the death of William McPeak, who had been the janitor of the Institution from its organization, and recommended the payment by the Board of his funeral expenses.

On motion, the Secretary was authorized to pay the bill of funeral expenses of the late janitor of the Institution.

Professor Bache, in behalf of the executive committee, presented a general statement of the financial condition of the Institution, and an account of the expenditures during the year 1862.

The Vice-President suggested the propriety of taking some action respecting Mr. George E. Badger, whose name still appeared as a member of this Board, but who was known to be in rebellion against the government.

After some remarks relative to the knowledge of the fact of Mr. Badger's present position, by several members of the Board, on motion of Mr. Trumbull the following resolution was adopted:

Resolved, That the secretary be directed to inform the Congress of the United States that George E. Badger, one of the Regents of this Institution, has not attended the recent meetings of the Board, and they are advised that he is now in rebellion against the government of the United States, and submit whether the name of said Badger should longer remain on the list of Regents of said Institution.

On motion, the Board adjourned to meet on Tuesday, February 3, at 7 o'clock p. m.

WASHINGTON, *February* 3, 1863.

The Board of Regents met this day, pursuant to adjournment, at 7½ o'clock p. m., in the Regents' room. Present: Hon. L. Trumbull, Hon. G. Davis, Hon. E McPherson, Hon. S. S. Cox, Hon. R. Wallach, General J. G. Totten, Professor A. D. Bache, and the Secretary.

Mr. Trumbull was called to the chair.

The minutes of the preceding meeting were read and approved.

The Secretary presented his annual report of the operations of the Institution during the year 1862, which was read and approved.

Professor Bache presented the report of the executive committee, containing an account of the receipts and expenditures for the year 1862 and estimates for 1863, which was read and approved.

On motion of Professor Bache, it was

Resolved, That the chairman appoint a member of the Board to fill the vacancy in the executive committee occasioned by the death of Mr. Pearce.

The chairman appointed Hon. Richard Wallach to fill the vacancy.

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The Secretary presented to the Board the following communications:

WAR DEPARTMENT,
Washington City, January 26, 1863.

SIR: I have this day requested Hiram Barney, esq., collector of the port of New York, to send to you the books, maps, papers, and other articles, now in his possession, taken by the United States forces in South Carolina, to be held in the Smithsonian Institution, subject to the orders of this department. I would be pleased to confer with you in regard to this matter if you will be so good as to call at this department Tuesday, at three o'clock p. m.

I am, sir, very respectfully, your obedient servant,

EDWIN M. STANTON,
Secretary of War.

Professor JOSEPH HENRY,
Secretary of the Smithsonian Institution.

WAR DEPARTMENT,
Washington City, January 29, 1863.

SIR: The Secretary of War directs that you take possession of the books and papers of Bishop John Johns, at his late residence at Fairfax Seminary, and transmit them under sufficient guard to Professor Henry, at the Smithsonian Institution, in this city.

Very respectfully, sir, your obedient servant,

EDWARD CANBY,
Brigadier General United States Volunteers.

Brigadier General J. P. SLOUGH,
United States Volunteers, Military Governor of Alexandria.

Professor Henry stated that in his interview with the Secretary of War the latter had requested that an inventory of the books, &c., should be made, and that they should be carefully preserved in a room by themselves. The Secretary, on behalf of the Regents, provisionally agreed to these propositions on condition that the expense of the shelving and fitting up of the room, and the preparation of the list, should be at the expense of the government.

The Board of Regents acquiesced in the propriety of taking charge of these libraries, and of carefully preserving them until the termination of the present war.

The Secretary stated that the libraries had been received—the one from South Carolina, in thirty-three boxes and one bundle, by the transportation company from New York, and that of Bishop Johns, in loose volumes, by army wagons from Alexandria. It is proposed to place these libraries in the unoccupied apartment in the south tower above the Regents' room.

The following extracts from the correspondence of the Institution were then presented, after which the Board adjourned, to meet again, if necessary, at the call of the Secretary.

WESTERN UNION TELEGRAPH COMPANY,
Secretary's Office, Rochester, N. Y., April 21, 1862.

DEAR SIR: Your favor of the 15th instant, enclosing circular, is received. I recommend that you get one hundred copies of your circular printed and send them to E. Creighton, esq., Superintendent of the Pacific Telegraph, Omaha.

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Nebraska Territory. Mr. Creighton will see them distributed along the line at the proper places, and will renew the same from time to time with his instructions. You will please give him particular directions so as to secure what you want.

I would like to have you send me a few copies after they are printed, that I may assist you in getting the several telegraph companies between Brownsville, in Missouri, and Washington, to transmit for you free this class of business for a limited time at least.

I have written to Mr. Creighton and sent him your circular, but as many copies will be required they had better be printed, as I suggest.

Yours, truly,

HIRAM SIBLEY,
President Western Union Telegraph Company.

The following is the circular referred to in the preceding letter, which has been distributed to the telegraph offices on the line between Missouri and California:

Directions for telegraphing storms to the Smithsonian Institution, Washington.

Violent storms usually come from the west—therefore, after a storm has commenced, send a telegram eastward, giving

1. The time of beginning of storm.
2. Direction of the wind.
3. Character of the storm, whether wind, rain, snow.

After the storm is over, send the following:

4. Time of ending of storm.
5. Changes of the wind.
6. Changes of temperature.

In accordance with this arrangement the Institution has received occasionally notices of storms commencing in the Rocky mountains, and even in California.

—

ST. LOUIS, *August* 14, 1862.

DEAR SIR: I believe I have before informed you of Dr. Parry's botanical exploration in the Colorado Territory. I have now a long series of barometrical observations made by him on the different points visited by him, and among them the snow peaks Mount Guyot and Pike's Peak.

From a preliminary calculation I find that the latter rises above Fontaine qui bouit, at its base, about 7,700 feet; the fountain itself Frémont finds 6,350, and I about 6,500, so that the peak is doubtless in the neighborhood of 14,000 feet, "snow-capped, but easy of access." The timber reaches to within 2,200 feet of the top. Mount Guyot is found to be about 13,000 feet high; Berthoud's Pass, 11,400, (all timbered.)

These results, which I think are approximatively correct, show the great elevation of the base of the mountains, (Denver, 5,300 feet; Mount Vernon, 6,400 feet;) the great elevation of the peaks, and the great height of the limit of timber. 10,000 to 12,000 feet seems to be that limit between forty and thirty-five degrees latitude in the Rocky mountains.

Very respectfully, yours,

GEORGE ENGELMANN.

Professor HENRY.

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The following remarks relative to this letter have been received from Professor Guyot, to whom it was submitted:

"I return to you, with my thanks for its communication, the interesting letter of Dr. Engelmann. I had become acquainted with a part of that information by a letter from himself. It is exceedingly gratifying to see that interesting field of labor beginning to be explored. I trust that Dr. Parry will be able to continue his useful investigations.

"A great desideratum for the mountain measurements of the far west is the determination of some points near the base of the great chains with some degree of accuracy. We would obtain such points by a few regular barometric stations. Could not an observer be found in Denver or Colorado City, for instance, who would at the same time furnish suitable corresponding observations for measurements in the mountains, which are indispensable for the accurate determination of the high peaks of the Rocky mountains? It is rather provoking to have the consciousness that we do not know the true altitude of any point in these 2,000 miles of inland country, within one or two hundred feet, to say the least.

"I suppose that the barometric correction by Plantamour, mentioned in the report of the proceedings of the British Association, relates to the influence of the hour of the day at which barometric measurements are made, as derived from the means of St. Bernard and Geneva. It is the correction the amount of which I tried to determine in the latitude of the Black mountain and elsewhere, and which I apply in all my measurements. It amounts to $\frac{1}{100}$ of the difference measured, in the hottest part of the day, above the mean, or $\frac{1}{60}$ if we take the daily extremes. It is thus of considerable importance, though usually neglected. I think, however, that the whole needs a considerable revision. Temperature is the main cause, but the diurnal variation of pressure also comes in with contrary effects."

UNITED STATES NATIONAL OBSERVATORY,
Washington City, January 8, 1862.

DEAR SIR: You are, I believe, aware that for some time past I have been engaged in investigations relative to Biela's comet. In the course of these investigations I have collected and discussed all the observations that could be found for each of the recorded six appearances, and, by help of independent elliptic elements for each, have digested these observations into a series of twenty-five normal places, extending though, with wide intervals, from 1772 to 1852. I have also computed rigorously the effect of planetary perturbations from 1846 to 1858, and am now engaged in continuing this computation to the next return in 1865. Moreover, I have carefully studied the relative motions of the two nuclei into which the comet is now divided, and find that the time and place of their separation can be indicated with a good degree of approximation, thus limiting the field of possible causes of the catastrophe.

It was my expectation, at the outset, to have extended the calculation of perturbations over the whole interval from 1772, so as to unite, if possible, by a single theory, all the observed places of the comet; but a nearer contemplation of this task, and a little actual trial, show that with my present official duties this would be a work of many years. It has occurred to me, however, that it would be in accordance with the plans of the Smithsonian Institution, and in keeping with the generous interest it has always shown in scientific investigations, to assist in this work by enabling me to employ a computer, to whom can be intrusted the more mechanical details of calculation. I venture, then, to suggest this proposition to you, and if, as I would fain hope, it should meet your approval, and you authorize me to enter into such an arrangement,

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I will gladly resume the work in accordance with my original plan, and with renewed hopes of success.

Trusting to hear from you on the subject, I am, respectfully and truly yours,

J. S. HUBBARD.

Professor HENRY.

The investigations to which the foregoing communication relates are of a highly interesting character, and well worthy the assistance of the Smithsonian Institution. The prosecution of the work has, however, for the present been suspended.

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WEST CHESTER, PA., *October* 31, 1862.

DEAR SIR: For the last two or three years I have been employing and amusing the leisure hours of my old age in collecting *materials* for brief notices of men and events in my native *county of Chester*, in the State of Pennsylvania. I obtained imperfect accounts of about one hundred and thirty men of the county, who, in their day and generation, had acquired some character and consequence among their contemporaries of the province from its first settlement, under the auspices of William Penn, down to the present time. Those materials were, indeed, very defective, owing to the culpable indifference and negligence of our ancestors in preserving them. But, such as they were, I endeavored to make the best use I could of them, and caused them to be printed in *numbers*, under the title of NOTAE CESTRIENSES, in a newspaper of this village. I cut the articles from the paper as they were published, and arranged copies of them, in numerical order, in three several *scrap-books* for preservation and convenient reference. One of these scrap-books I shall deposit in the library of the Chester County Cabinet; another will be deposited in the library of the Pennsylvania Historical Society, at Philadelphia; and the third I propose, with your permission, if you can allow it the space it may occupy, to put in the library of the Smithsonian Institution, at Washington, with the view and hope that in each of those depositories, the said NOTAE may be accessible to any and every one who may have curiosity enough to wish to refer to them.

My humble *memorials* of the men of Chester are very meagre; yet, when I review them, and consider how careless and indifferent our people have been in such matters, I am surprised even at my own success in gathering my inadequate materials for the undertaking, scattered as they were over so extensive a district.

I am, dear sir, your feeble yet faithful octogenarian friend,

WILLIAM DARLINGTON.

Prof. JOSEPH HENRY.

The foregoing letter is from our much respected and esteemed correspondent the venerable Dr. William Darlington, of West Chester, Pennsylvania. It relates to a work performed in the evening of a long and laborious life, devoted to the advance of science and the practice of Christian love and charity. Its publication may induce others to render a like service to their neighborhood, and thus increase the inducements to well doing through the desire inseparably connected with our instincts of *a future*—to live favorably in the memory of those who may succeed us. (Since this letter was presented to the board Dr Darlington has departed this life. He died on his eighty-first birth-day, April. 1863.)

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PARIS, *November* 24, 1862.

DEAR SIR: Mr. Hermann de Schlagintweit has enclosed me this note for you, asking me to add something as an introduction, which is scarcely necessary, seeing that he is one of the brothers Schlagintweit whose labors in Thibet and high India are so familiar to us. Those of the specimens I have seen are highly interesting, and the fact that they were collected by the Schlagintweits in person gives them a full guarantee.

Your obedient servant,

THEODORE LYMAN.

"MUNICH, (BAVARIA,) *November* 7, 1862.

DEAR SIR: Some days ago I had the pleasure of making the acquaintance of Mr. Theodore Lyman, who gave me many interesting facts respecting your Institution, and especially about your important practical and scientific meteorological researches. He also gave me a most lively description of the extent and the variety of the collections of the Institution. As he has kindly given me an introduction to you, I take the liberty of addressing you this communication relative to such parts of our collections of ethnography and natural history as we are now about to dispose of.

Of the objects mentioned in the accompanying statement, Mr. Lyman has seen but few, but sufficient, I trust, to enable him to give you more particulars as to their character if it should be desired, especially as he has had Professors Kaup and Siebold's opinion of them.

Besides the objects of natural history, I may mention the photographic colored fac-similes of a great number of my water-color drawings, their number amounting to 125, and including only such objects as are not among the plates published in our atlas. Mr. Brockhaus has made several series for England, one for Paris, and two for India, but has a few still remaining in his hands. The price he charges is 70 thalers, or £10, for thirty views, or £40 for the series. Mr. Lyman has seen them, and will perhaps be good enough to let you know in a few words how they are executed, as my description might too easily be influenced by the fact that I made the originals myself, or worked over those made by my brother Adolphe.

My address for this winter will be: Dultplatz 10, Munich, Bavaria.

With the expression of my most sincere consideration, I remain yours, most truly,

"HERMANN DE SCHLAGINTWEIT.

Ethnography.—The objects are:

Twenty complete skeletons, head and body, (put up,) of India Thibet, and Turkistan. They include savage tribes of India, such as Gonds, Santhals, &c. Price of the original, £20 to £30; of a copy in natural size, color, &c., in papier mache, £5.

Fifty skulls, without the body, from the same regions. Price of an original, £4 to £6; of a copy in papier mache, £1½

I mention especially our collection of *facial casts*, of which I send you the prices of copies in metal and also in plaster. The metallic casts are better able to resist the effects of time and exposure, but for a most careful reproduction of any detail the plaster copies can be entirely relied on. Price in metal, 24 shillings; in plaster, 4 shillings a cast.

Zoology.—We have about fifty large stuffed animals, many in duplicate, among which are *Bos grunniens*, *Equus hemionus*, *Asinus onager*, male and female, *Ovis argali*, (ammon,) in fact, of nearly all the larger animals of Thibet, one to three specimens of each. Price of each, £9 to £15.

Of smaller animals, such as *Cervus moschatus*, the different ovine and caprine domestic animals of Central Asia, etc., the price is from £2 to £6. Numerous skeletons of mammalia, put up; price, £2 to £5. Besides, skulls of *Equus hemionus*, £5; of a rhinoceros, from Bhutan Tarai, £8; of *Ovis argali*, £5, &c. An elephant skull, unusually large, with a weight (198 lbs.) and cranial capacity of about 6,200 cubic inches, determined by filling

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it with large shot. The *brain* of another elephant skull in plaster. It was obtained by a skull defective in its facial parts, being filled with plaster, and then gradually broken into small pieces, so that the very foldings of the dura mater remained untouched; the original in plaster, £15; a fac-simile in papier mache, £5.

I might add details of about 400 species of *birds*, 2 to 10 shillings, in nearly 1,800 specimens, chiefly from the Himalaya and Thibet; reptiles, 8 shillings to £1, and fishes, 5 to 10 shillings, determined by Dr. Gunther, (Proceedings Zool. Soc., London;) butterflies, 20 for £1, determined by Dr. Moore; insects, 40 for £1, as well as plants and geological collections.

The objects mentioned are at a country seat of ours, Jaegersburg, near Forchheim, Bavaria, not very far by rail from Munich.

CHRISTIANIA, *January* 6, 1863.

SIR: The knowledge of the countries and nations of the earth being particularly useful as well to the mariner as to the trader, it ought to be especially cultivated by us Norwegians. One of the most effective means of calling forth the sympathies of the people in behalf of a science is that of establishing public museums, or collections of objects, presenting immediately to the eye things of which no accurate idea or conception can be conveyed by a mere description. The public having thus, so to say, intuitively acquired a feeling of interest in the subject, it will be possible, by united efforts, in the course of some years, to bring together collections not only instructive to the nation possessing them, but also deserving the admiration of foreigners.

The British government has in this respect set the greatest example. * * *

An ethnological museum having now been established at the University of Christiania with the object of illustrating the manners, mode of living, and civilization of the various nations, it is to be hoped that the numerous and enterprising class of Norwegian seamen will avail themselves of the many opportunities offered on distant voyages to procure objects of interest for such a common national depository. The managers of the collection have already had frequent occasions to express their thanks even to common sailors for gifts to the institution, for which the state has also set apart a sum that, although moderate, will enable the managers to refund expenses incurred in procuring objects for the museum. Thus it will be within the power of any seaman to contribute towards enlarging the collection.

Trusting to the kind support of the public also for the future, the managers consider it expedient to lay down some rules for the guidance of those who, for the sake of public utility, may be willing thus to contribute towards enlightening their fellow citizens:

1. The nations and countries, the condition and state of which it will be of particular interest to see illustrated and exhibited, are especially those most differing from our own country and our own people; consequently, in the first place, the nations out of Europe, and, among the Europeans, those least known, and of the most antiquated manners. As a rule, objects of antiquity are also of greater rarity, and will be more acceptable to a collection than things now in use.
2. The objects, suitable for illustrating the condition of such nations, are innumerable. Sacred images, weapons, tools used in the principal trades, clothing, furniture, domestic implements, and products of industry, may be mentioned. Of course, models, drawings, and especially photographs, will afford quite as trustworthy information as the object itself. Articles liable to spoil, or the preservation of which would involve expenses, cannot be received in a museum.
3. The limited means at the disposal of a Norwegian institution will, as a matter of course, necessitate the selection of articles the price of which is

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not excessive. The exhibition of objects of silver or gold or of regal luxuries is also, in fact, of less importance than illustrating the condition of the people itself.

4. In order, however, that the objects of interest to a museum may be applied according to their purpose—illustrating the nature of a country or the mode of living of the people—it will be necessary that every article forwarded be accompanied by an accurate account of where it was procured; by what nation used or made; in what way used, and for what purpose intended.

In order to give this request due publicity, it is desirable not only to assist in distributing these lines to those who may be supposed willing to advance the interests of the Institution, but also, perhaps even more so, to make the subject known by personally applying to such acquaintances as are able to procure articles of interest.

I remain, sir, yours, very respectfully,

LOUIS KR. DAA.

In answer to this circular, the directors of the Museum of Christiania have been informed that the Smithsonian Institution will co-operate with them by contributing ethnological specimens from its own collections, and by forwarding articles of a similar character which may be presented by others.

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NEWARK, OHIO, *December* 8, 1862.

DEAR SIR: In the last report of the Regents I notice the Smithsonian Institution proposes to prepare a map of that portion of the United States in which aboriginal antiquities are found. Feeling it to be the duty of every one to contribute to the general fund of knowledge, I take this opportunity of calling attention to two classes of archæological remains, which I have studied cursorily, and have not seen described in any work on the subject.

1. Remains of ancient cities and villages in Missouri. I have seen many of these. Whether large or small, they are similar in character. The remains consist of a series of tumuli, from one to two feet in height, and varying from sixteen to twenty-four feet square. These tumuli are in straight lines or rows, some numbering hundreds, and others, as of villages, tens; the rows cross each other at right angles, and the little mounds vary from four to eight rods apart. On digging into these mounds broken pieces of pottery are found, such as are common to all the antiquities of the country. In one instance an entire vessel was turned up. About the centre of each tumulus charcoal and ashes are found. I have examined several, and the pottery, charcoal and ashes are constants in all I have opened. Fredericktown, in Madison county, Missouri, seems to have been the site of a considerable city, extending from a branch of the Castor creek, which flows east of the village to near the east fork of the St. Francis, on the west, being perhaps a mile and a half long and a mile wide from north to south.

2. A different class of tumuli are common in southern Tennessee. The first I observed at the site of old Fort Pickering, two miles below Memphis. It is a parallelogram, some 15 to 20 feet high, 120 feet long by some 60 wide, and surrounded by a great many smaller works, just traceable, of various fancies and designs. I examined this in the winter of 1847–'48. Last spring I visited the site of the battle of Shiloh. This system of antiquities was very abundant there, but not so large as the one near Memphis. In a walk of half a mile I counted eleven of these parallelograms, generally 60 feet long and 25 wide on the top. Several of them were appropriated to the burial of our dead, killed in the battle of Shiloh. The smaller works are innumerable, and are generally circles. I found them all on the west bank of the Tennessee river, and the

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most interesting on the south side of Owl creek. I noticed one at the village of Savannah, and a very remarkable circular mound, raised by a gradual and equal slope from all sides to the centre, which (the centre) I judged to be about 3 feet higher than the sides, and the diameter of the whole about 100 feet. I regretted that I had not more leisure to devote to the study of these singular antiquities, but my mission was one of mercy, and afforded me little time for antiquarian research or speculation.

When peace shall be restored to our distracted country, it would be well for some one or association to pursue a systematic and thorough examination of all our antiquities, and to trace the progress of those remains from the rude structures in Canada, south to Central America; for, from my own observations, I am satisfied that these remains attest a gradual improvement of the race or races that constructed them from the north to the south. The Missouri cities and villages were doubtless mere mud huts, and perhaps adobes, such as still are used in northern and New Mexico, which in central and southern Mexico and Central America are improved into structures of solid masonry, with sculptures and hieroglyphics. Whether these were all the work of one race of men, called by some the mound-builders, or of several distinct races, may never be satisfactorily settled; but a systematic study of the whole will afford an interesting chapter in the unwritten history of man.

Truly yours,

I. DILLE.

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VALPARAISO, *September* 17, 1862.

DEAR SIR: In reply to your esteemed favor of the 23d July, I beg leave to state, what I had omitted in my former communication, that the case of skulls, &c., from Patagonia, was forwarded by me to the care of the United States consul at Panama, by the British mail steamer, expenses thereon paid by me in advance as far as Panama. I would gladly have done so to the port of delivery, but found no means of effecting it. By this time I shall hope that they are in your possession. Since you manifest an interest in the subject, I shall take an early opportunity of forwarding to the Institute the specimen of an *Atacama mummy*—one which I found myself several years ago in the neighborhood of the volcano of that name, and which I left deposited with a friend. I have ordered it to be sent to the coast, along with the utensils and articles of dress and use that were found with the body. At the same time I shall take the liberty of adding a few observations explanatory of the circumstances under which these relics are generally found, and the probable origin of the custom.

Very respectfully, your obedient servant,

AQ. RIED, *M. D.*

JOSEPH HENRY, Esq.,
Smithsonian Institution, Washington.

The account of the human remains mentioned by Dr. Ried in the foregoing letter will be found in the appendix to the present report.

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261 GREENE STREET, NEW YORK,
November 7, 1862.

DEAR SIR: I enclose herewith a draft of the proposed circular (philological) accompanied by the alphabet drawn up by Professor Whitney, and the standard comparative vocabulary used by Gallatin and Hale. It was at first my inten-

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tion to modify and enlarge the latter, but on a full review of the subject, including a list of proposed words, and on consultation with Mr. Shea, I concluded not to do so without reference to yourself. With certain defects it is yet a very judicious selection, and it has already been used so largely that a change may now be injudicious. Still, if you think best, I will advise with Shea, Squier, and Bartlett, and with them prepare a catalogue of additional words as an appendix. I am of opinion, however, that the instructions will lead collectors in the right track.

I had also intended to have the circular translated into French here, but the health of the person from whom I expected this assistance is too bad to allow him to do it at present, and I do not wish to detain it longer. I would recommend that a translation be made into Spanish, (Mexican,) French, and German, both of this circular, if adopted, and the one on archæology. To save trouble with the vocabulary, I send a duplicate blank. There are many French priests both in the Hudson's Bay country and in Oregon; the Spanish, or rather Mexican, priests in New Mexico, California, and elsewhere, may prove valuable assistants, and among the Germans, even many soldiers in the army, are excellently fitted to collect, and well disposed to do so. It will be well to send a number, say one hundred copies, to the Bureau of Indian Affairs, to be distributed among the agents; an additional hundred to the Bureau of Topographical Engineers; a like number to the Surveyor General of the Land Office, for the use of his department; and to the Secretaries of State and of the Navy, for distribution among our consuls and officers bound to the western coast of Mexico, and elsewhere. The governor of the Hudson's Bay Company can, I presume, be also interested in the subject, and though last, not least, the governor of Russian America.

One thing that escaped my memory in preparing the archæological circular, was to say that due credit would be given to collectors. It will be better, however, if you prefix the whole by an official notice emanating from yourself to this effect. An acknowledgment from the head of an institution like the Smithsonian is a great inducement to exertion.

I see in the last annual report Mr. Morgan's circular respecting an archæological map. If you recollect, this was one of the points which I proposed to embrace in my work. I think not only of preparing a general map of North America, embodying the great families, but special maps of particular districts inhabited by a large number of tribes, included in a few families, who live within a small space. Such are Russian and British America, Washington Territory, Oregon, and California, for all of which I possess minute information. Mr. Bartlett has furnished me with the ranges of the New Mexican and Texan tribes, and I have material from other sources covering other parts of the country. Of course, all this, with the consent of the bureau, will belong to the Smithsonian, and I have no wish to monopolize the merit of such a work; but as I know that no one else possesses the material that I do, at least of the country west of the Rocky mountains, I should be unwilling to relinquish to another so important a task. Besides this, until the comparison of the languages is completed, the ethnological part of the map cannot be perfected.

I would, therefore, suggest that skeleton maps be issued, as soon as prepared, to various persons interested in ethnology, and who are familiar with particular regions, to be filled up with such information as they may possess, to be afterwards reduced, giving to each the credit of his contributions. Mr. Shea, Mr. Bartlett, General Charles P. Stone, Mr. Buckingham Smith, Dr. Hayden, and other gentlemen, can all add largely to such a work. I have already transmitted departmental maps to each Territory, under the sanction of the Indian bureau. Permit me, further, to recommend that the proposed map should extend far enough north to embrace all the Esquimaux tribes; and west, to take in the sedentary Tchuktchi or Namollos of Russian Asia.

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I am very much afraid that the amount of information proposed to be con-
ined in the ethnological map will render it confused. I would suggest whether
would not be better to have *two* maps—one showing the character of the
untry, whether forest or prairie, desert or arable, with the isothermal lines, &c;
e other, its counterpart, containing merely the principal topographical features,
ch as the rivers and main chains of mountains, upon which the boundaries
d names of the tribes and local names should appear. The first might indeed
ve designated upon it the boundaries of the families, but should not be colored.
e latter to be colored and show the tribal subdivisions.

Begging to apologize for the length of this communication, I am, very truly,
ur obedient servant,

GEORGE GIBBS.

Professor JOSEPH HENRY,
Secretary Smithsonian Institution, Washington.

NOVEMBER 18, 1862.

In regard to the proposed map of the continent mentioned in your letter of
13th, I have the honor to submit the following suggestions: The prepara-
n of a base map to serve for these various uses is a subject of the greatest
erest to every one concerned in scientific pursuits, and will form a lasting
nument of the wisdom and efficiency of the Smithsonian Institution. The
eat need of such a one is evident from the fact that I have been unable
procure in this city a tolerably correct and recent map, embracing the whole
ntinent on a scale of convenient size for ethnological purposes, and have actu-
y been compelled to send to Germany for one. The *scale* recommended by
. Morgan strikes me as very suitable. In my remarks upon his propositions
eant only to object to the introduction upon a strictly ethnological map of
details of topography, meteorology, and hypsometry. My own idea, in
ich I am supported by other gentlemen engaged in the same pursuit, is, that
thnological map should exhibit the principal features of the country, the
ers, mountain chains, and particularly the *passes* in the mountains, and the
n Indian trails, where the nature of the country was such as to render these
l and distinct; that it should also have the nomenclature fully given, in the
ular form to enable collectors in the field to decide upon exact localities, but in
h a type as to distinguish the popular from the true Indian names. Where,
I shall presently suggest, sectional maps on a larger scale are prepared, this
enclature may, however, better be confined on the *general* map to a few main
cts, such as the larger rivers, in order to avoid perplexity. Political divi-
s should be as few as possible and faintly indicated. Indeed, in an ethno-
al point of view, they are almost worthless, as ours are generally arbitrary
not founded on geographical features.

Besides this general map, I would also have a series of maps on a larger
e, comprising particular sections of country, having direct reference to
distribution of tribes and families. Thus, for instance, one map might
w the country occupied by the different tribes of the Dakota, another of the
ke or Shoshonee, &c. The advantage of this would be, that whereas in the
eral map a single color must be used to indicate a great family, composed of
erous tribes, and its subdivisions could not be indicated without leading to
usion, these collateral maps could be made to exhibit the districts occupied
ach. This is very important where the languages spoken by various tribes
r greatly, as among the Snakes, the Bannak from the Ute, and that from
Comanche. The scale on which these sub-maps should be constructed
ld vary greatly, depending upon two points: first, the number of tribes oc-
ying a given region; second, upon the amount of minute information likely
be acquired. On the western coast of America, or that district lying between
Cascade and Sierra Nevada mountains and the sea, there are a great number

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of tribes, speaking quite a number of absolutely different languages, and of some of these there are various dialects, differing sufficiently to require de signation. Having fixed and permanent villages, their nomenclature will b much more extensive than what we are likely to get from nomadic bands wh roam in large numbers and cannot be followed up. The same state of thing existed on the Atlantic, and of portions of the country we have still quite rich historical material.

You will see that the above will contemplate, in fact, an ethnological atlas, an that its preparation will be a matter of much time and labor, and occupy th attention of all those interested in the study. As regards expense, that nee not be great at any one time, for the sub-maps, like the general one, might, i the first place, be prepared in skeleton, and distributed like the circulars to in vite inquiry and contribution of material. As the work progresses, the topog raphy may be filled in, for these maps will afford room to exhibit it in much greater detail than the larger one.

In fact, as regards a general map, even upon the scale proposed, and for pur poses of topography itself, I doubt the propriety of going greatly into details. The best general European maps avoid this. The map of the Pacific railroad explorations, prepared under Mr. Davis's instructions, is almost useless from it very minuteness. All the principal features are lost in the details of topography. But, above all things, it appears to me that multiplicity of object should b avoided. Of course, a map showing the amount of rain per annum should ex hibit the causes of variation in different districts, but this depends on great features and not on minute ones; and until it is shown that magnetics, for in stance, influence the amount of precipitation, it would be improper to introduc lines of equal variation on a map intended to show those of equal rain fall. S with a general topographical or ethnological map.

I am engaged, with the assistance of the others, in drawing up the detail which we think it would be well to include in the sub-maps, indicating the bound aries and scales, which I will forward, as soon as completed, for your considera tion. Of course, I do not know how far you may be inclined to extend thi subject, but the inquiry will at any rate be the means of ascertaining som valuable facts as to the amount of information at hand.

This leads me to another subject. I find the field which I at first propose to myself has increased to such formidable proportions that, on consultatio with Mr. Bartlett and others, I have concluded to propose the followin scheme in its place: Professor Henry to request Messrs. Bartlett, Shea, Squier Buckingham Smith, and such others as he may think fit, to unite with th writer in a comprehensive work upon the ethnology and philology of North America, to be published by the Institution, and to prepare materials for map showing the location of the Indian tribes at various periods. The work ca appear in parts, if thought advisable, as each finishes his portion. Mr. B. R Ross would doubtless undertake British North America, (except the immediat coast,) including the Chepewyan family, the Crees, and Knisteneaux, and per haps the Esquimaux, and prepare a memoir giving the history of the subject and all that is valuable regarding those tribes. Mr. Shea to take the country east of the Mississippi, except Georgia and Florida, which might be assigned t Mr. Smith. Shea's knowledge and material exceed those of any one, on th people of this region, and his critical acumen is remarkable. Mr. Squier would assume Central America, and Mr. Bartlett, Texas and New Mexico. The write to take the northwest coast, Washington Territory, Oregon, and California. There would remain the country intermediate between the Mississippi and Rocky mountains and Mexico. Mexico I would suggest should be assigned t some of the ethnologists of that country, with an invitation to prepare a general view of the subject as relates to it.

The work should embrace histography, ethnological divisions of families

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founded on comparative philology, habits, &c., and psychology—in fact, to have as wide a range as there are reliable materials to work on. As it would take too long to await its entire completion, it might appear in a series of monographs, such as you have already published on various subjects, but the field is too wide for any one man to undertake an exhaustive work, embracing the whole.

I should explain that this suggestion comes entirely from myself, and that I am led to it by consultation with these gentlemen as to their views of the demands of ethnology in a work of this kind, not that they desired to invite such a request.

GEORGE GIBBS.

DECEMBER 26, 1862.

I had the honor to receive, in due course, your letter of December 18, informing me that the questions submitted in mine of December 3 had been referred to Professor Whitney, and shall hope to hear from him in reply.

Pursuant to the directions I received in a former letter, I wrote to Dr. Davis, requesting him to make any suggestions which might occur to him in regard to the archæological circular; but having received no reply, I presume that he is absent from the city. I called on Mr. Squier, who promised to send me his views on the same subject, but have not yet received them. I mention this as the cause of the delay in communicating the result to you. If I do not hear from you to the contrary, I will let the circular stand as it is.

In accordance with your desire that I should prepare a list of additional words to accompany the philological circular, I have gone into one at some length, in concurrence with Mr. Shea. We agree in submitting to you that the publication of this additional vocabulary be deferred for the present, and appear hereafter as a sort of supplement, when we shall have rendered it tolerably perfect. It may be advisable to extend it to some two thousand or twenty-five hundred words and phrases, some of them generally applicable, others to only particular parts of the country. The reason for this extension is as follows:

As regards nouns, the almost entire absence of generic terms renders it necessary that each object should be as specifically designated as possible; for instance, each particular kind of animal, tree, &c. Mr. Morgan's circular illustrates this point in respect to relationships, which are distinguished by singular complication and a great variety of names. In the pronouns there are not only absolute but copulative pronouns, sometimes both personal and possessive, the copulative being joined to or incorporated with nouns and adjectives or verbs, as the case may be. In some languages, at least, there are two and even three sets of cardinal numbers, one being positive or simple, another personal or applied to men, and still another to the counting of money. Again, of the verbs, the degree of detail into which these languages run may be seen from the fact that while there may be no abstract word for "to wash" or "kill," there will be found separate words for to wash the hands, face, and clothes, and to kill by stabbing, shooting with a bow, gun, &c.

You will therefore perceive that in order to arrive at any degree of precision it will be necessary to furnish quite a numerous collection of words, and that reference must be had in the selection both of these and the phrases to the idiom of the language and turn of thought of the speaker. To accomplish this in a way satisfactory to yourself will require some time, but in the mean while the present circular will perform its own more limited task.

The scientific names of animals, &c., should, of course, be given; but whether it will be best to undertake a translation of the whole into other languages is a question, for there are many words of daily use in Indian life which have no synonyms in dictionaries, or except in the various patois.

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DECEMBER 26, 1862.

I owe you an apology for my omission to comply with your request that I should send you an account of what I am doing. It is, in brief, this:

I propose to give a connected series of vocabularies of all the known Indian languages west of the Rocky mountains, deriving from them a classification of the various tribes into families, and upon this basis to form an ethnological map of that part of the country. In addition to this, I propose to give a memoir upon the character, customs, &c., of those tribes with which I have been in direct communication, more especially as regards their habits of thinking, mythology, &c., and to include or append sub-memoirs by other persons upon particular districts out of my own range, and a *résumé* of the statistics of population at various periods so far as known. Of course the various authorities will be referred to, so as to give the bibliography, history, &c., of each section.

I have limited the above mentioned to the country west of the Rocky mountains, because I am satisfied that it is all that I can accomplish within a reasonable time, and that the labors of several investigators are required for an exhaustive discussion of what has already been collected in various parts of the continent. In a former letter I took the liberty of suggesting the allotment of other parts of this work to several gentlemen who have pursued separate examnations; such as Mr. Squier for Central America; Mr. Bartlett for Texas, New Mexico, and Arizona; Mr. Shea for the Atlantic section, except Georgia and Florida, which should fall to Mr. Buckingham Smith; and Mr. B. R. Ross, of the Hudson's Bay Company, for British America, except the northwest coast, which would come within my own field. Mr. Smith suggests El Exmo. Señor Don Fernando Ramirez, of Mexico, as the proper man to give the Mexican part, and thinks that he would willingly undertake it. It appears to me that the calling in assistance from Canadian and Mexican sources would not only add value to the contributions, but be a matter of policy as regards the Institution itself, making it a North American centre, instead of one confined to the United States alone. I need not say that the value of the ethnological series which you may publish will be greatly enhanced by the fact that each contribution is a specialty. It would, moreover, give the opportunity to make each paper exhaustive within its own region; Señor Ramirez, for example, giving the literary history of the Mexican tribes, as well as their philology and ethnology.

Mr. Ross's vocabularies, together with Mr. Kennicott's, are of the utmost importance in furnishing materials for comparison between the northern Chepewyan languages and the southern branches, which extend into New Mexico and Chihuahua. His notes are carefully prepared and well written. If you deem it desirable, I will forward them for your examination.

GEORGE GIBBS.

JANUARY 20, 1863.

I herewith enclose a memorandum of what is doing in the way of ethnology, so far as I am informed.

Mr. Shea has two more numbers of his series out, copies of which will immediately be sent you. One of them is the vocabulary of the San Antonio mission Indians, the one which Mr. Taylor denominates "Sextapay," but the correctness of which title is questionable. Mr. Shea has edited this with great care, rearranging the whole, as the manuscript was in a confused state. I beg to refer you to his preface, as also to the appeal at the end of the work. The other is Mr. Smith's *Névome*.

The Sextapay, or San Antonio, is one of the numbers due on your contribution for 1861. Its publication has been delayed by the labor incident to putting it in presentable form, and by the necessity of casting some special type. This,

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together with the Mutsun and Yakama grammars, fills the programme for that year.

On your subscription for 1862 (on which no payment has yet been made) Smith's *Névome* is the first. The *vocabulary* of the Mutsun is now going through the press, and will be immediately followed by a number containing three of my larger vocabularies, the Chinook *proper*, the Clallam, and the Lummi, the last two being languages of the Selish family.

Shea proposes to follow up for 1863 with the Mohawk radicals, a valuable Jesuit manuscript, a Jesuit grammar of the Micmac, and my dictionary of the Nisqually. I trust sincerely you will find it convenient to continue your aid, for I am not alone in considering this the most valuable series of philological publications now going on. Mr. Moore, the librarian of the New York Historical Society, recently told me that neither England nor France could show anything to equal it.

The Chinook jargon is now finally in hand, and I trust to send you the proofs of the first signatures this week, as also of the circulars.

GEORGE GIBBS.

—

JANUARY 21, 1863.

Mr. Buckingham Smith called upon me to-day and showed me a letter from Don José Fernando Ramirez, of Mexico, from which I enclose an abstract:

"There exist no vocabularies of the languages, nor have the grammars ever been preserved, written by the early missionaries. It is almost impossible to bring together those that have been printed. On this subject a work has been commenced, entitled 'Cuadro descriptivo y comparativo de las lenguas indigenas de Mexico,' compendium descriptive and comparative of the native tongues of Mexico, by Don Francisco Pimentel. The first volume only has been printed, which comprehends the analysis of twelve languages. Unfortunately, material is wanting. Those contained in the first volume are the Huaxteco, Mixteco, Pame, Othomi, Mexican, Zapateco, Tarahumar, Tarasco, Totonaco, Opata or Eguema, Cahita, and Matlaznica. If you have succeeded in publishing the grammars of which you informed me, (Pima and Sleve,) and they should arrive in time, they will be examined in the work. I have not and am unacquainted with the 'Archæology of the United States, by Samuel F. Haven,' about which you write me. Of the Smithsonian Contributions I have only the second, third, and fourth volumes, unless the first volume should be 'Ancient Monuments of the Mississippi Valley,' which I possess. At present there is no way of sending books to Mexico, unless the Department of State will take charge of them."

Mr. Smith has handed me the above with the view that I might ask of you to send to Señor Ramirez such other papers of the "Contributions" as belong to archæology. That gentleman is well known as one of the most distinguished scholars in that department in Mexico, and one whom it would be desirable for the Institution to number among its correspondents. I am, however, astonished at the account he gives of the paucity of works on the indigenous languages of that country, so entirely opposite to our general belief here. Under any circumstances, Pimentel's work should be procured if possible.

I am, sir, very respectfully, your obedient servant,

GEORGE GIBBS.

Prof. JOSEPH HENRY,
Secretary to the Smithsonian Institution.

—

NEW YORK, *November* 1, 1862.

DEAR SIR: The Indian works now printing and to be completed before the end of the year, beside the Sextapay or San Antonio vocabulary, are:

1. The Mutsun vocabulary of Padre Felipe Arroyo de la Cuesta. This is a

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collection of phrases, but seems to include all the known words of the language, and, with the grammar already printed, will furnish all necessary means of comparing the language with others. To complete the subject, nothing will be needed but good comparative vocabularies of the Soledad, and other dialects.

II. The Micmac grammar of M. Maillard. Mr. Gallatin drew some ideas from an extract from fragments of this, but the entire work is necessary as the best known treatise of the most easterly branch of the Algonquin family.

III. The radical words of the Mohawk language by Rev. James Bruyas. This work treats the language on the system introduced by the Port Royalists, of learning the roots or radical words of a language and then deducing the derivatives. It divides the whole language into conjugations, and gives under each root the derivatives with many examples.

IV. An alphabetical vocabulary of the Chinook language by Mr. George Gibbs, in all probability the largest that will ever be made, as the tribe is fast vanishing. I have also in hand, and may have ready in time, some others, as—

V. Vocabularies of the Klallam and Lummi, by Mr. George Gibbs.

VI. A Névome or Pima grammar, edited by Buckingham Smith, esq. Next to these I wish to bring out—

VII. A Nisqually dictionary, by Mr. Gibbs.

VIII. An extremely valuable and ample dictionary of the Illinois language, compiled, I judge, by the Rev. Father Le Boulanger, and for extent, clearness, and variety, one of the most important labors of the kind known to us.

IX. Huron radical words by Father Carheil, revised by Father Potier, also a very ample and important work. Nos. 8 and 9 will each form a volume of 500 pages, such as the Onondaga dictionary published by me, and their publication is an undertaking of such magnitude that it can be carried out only by the active co-operation of those interested in philological studies.

I thank you for the information as to the forthcoming Cree grammar, which I will make note of in the Historical Magazine.

Your obedient servant,

JOHN GILMARY SHEA.

—

DEVON, SASKATCHEWAN, HUDSON'S BAY TERRITORIES,
July 4, 1862

SIR: I beg to forward to you the enclosed schedule, which I received about a fortnight since, and have now filled up according to the request of L. H. Morgan, esq. I have had some little difficulty in ascertaining the precise word for some of the relationships noted down, but I trust that the results of my investigations will be as free from error as can well be expected, and that the paper as now returned will meet the wishes of the gentleman who sent it to me. The postal arrangements of this country are in so primitive a state that I fear some months will elapse ere this letter and the enclosure reaches you; but it shall be despatched from here by the first opportunity that may occur. I have been living amongst the Cree Indians for ten years, and have long been so far acquainted with their language as to be able to preach to my congregation extempore. For some time past my scraps of spare time have been devoted to the work of compiling a *dictionary* of the native tongue, as nothing of the kind is yet extant, and my own experience in past years has taught me that it is greatly needed. I have now completed the first part, namely, the English-Cree which contains very nearly 6,000 English words, with their corresponding Indian terms, and numerous idiomatic expressions; but I have still sufficient to occupy my disposable hours for many months in order to complete all that I contemplate. A friend had advised me to apply to yourself respecting the publication of the work when finished, and it was my intention to do so; but

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the failing health of Mrs. Watkins has compelled me to seek permission to visit England next summer, I have declined doing so, as probably the Church Missionary Society, with which I am connected, may undertake to carry the work through the press while I am in my native land, and have the opportunity of correcting any typographical errors which may be made in the proof-sheets. Still you will perhaps allow me to ask if the Smithsonian Institution is in the habit of publishing such books as dictionaries of the native languages, and upon what terms it undertakes to have them printed, as I have no means of ascertaining this point. If you have any circular or pamphlet at hand explanatory of the principles and aims of the institution with which you are officially connected, I should feel much obliged by your kindly forwarding one to me.

Believe me, sir, yours, very obediently,

E. A. WATKINS.

Professor HENRY.

The writer of this letter was informed that the Institution does publish works of the kind mentioned, if approved by a commission of examination, provided that no other means exists of bringing them before the public.

—

DEER CREEK, NEBRASKA TERRITORY,
September 19, 1862.

HONORED SIR: As I am unable to express myself in English as well as is necessary and as I wished, I take the liberty of sending a German letter, and beg for a kind excuse and acceptance of the same.

When I arrived here two years ago, unfortunately, immediately after the disappearance of the missionary Brunninger, I found some publications of the Smithsonian Institution relating to various observations. I regret that I was neither in a position to read them cursorily through, nor had I time to even grasp their contents. When, however, time and other business did permit, I looked into them carefully and found great pleasure in so doing, for which reason I also recognize it as my duty as far as I am able with my feeble powers to show my gratitude. Only I must also add with much regret that understanding and apparatus are wanting to me in many branches. Because, however, I stand here so ignorant, I considered it to be well and necessary first to ask whether or with what subjects I could render to your honored institution my feeble services. One point which I in the first place considered as appropriate is the language of the Shyenne Indians. I have now passed a year with them in a capacity which is well known to you, and for a quarter of a year I have travelled about with them for the purpose of learning the language, but have still learned comparatively little. I permit myself, however, to contribute to your honored institution a small extract from the treasure which I have learned and collected for their kind consideration. Should it be acceptable to your honored institution, I will, if you desire, send more. In the mean time I remain, honored sir, with the highest esteem, your obedient,

GEORGE FLACHENECKER,
Evangelical Lutheran Missionary.

To the SMITHSONIAN INSTITUTION.

—

HONOLULU, *July* 15, 1862.

MY DEAR SIR: I am in receipt of your favors, dated April 14 and 21, enclosing an order from Professor Bache for tidal apparatus, which I forward to

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San Francisco by this mail. I am in hopes to receive it, for I am not aware that any observations have ever been made, at a position similar to that of our islands, a long distance from a coast line.

I have also received the reports of the Smithsonian Institution for the years 1854–'60, check lists of American shells, and catalogue of publications of societies, for which I beg to return my sincere thanks.

I forward you, per this mail, a catalogue of the works in my library relating to the Sandwich Islands, which I believe to be near, if not quite, complete. You will notice in it three periodicals, formerly published at our islands, not in your catalogue. They contain a few scientific articles. Please look over the catalogue, and any works published here which you may wish to obtain, please inform me, and if possible, they will be sent you.

Your wishes in regard to a series of shells described by me shall be attended to. I also shall furnish you, as soon as I can obtain it, a specimen of the bat living on our islands, (the only indigenous mammal here,) for the reason that I received a letter by last mail from Dr. Gray, of the British Museum, acknowledging the receipt of one from me, which he decides, after a hasty examination, to be identical with a species common to the east and northerly part of America, usually called the "New York Bat." He was to exhibit it at the meeting of the Zoological Society the evening of the day he wrote me. If he is correct, it will be a singular exception to the laws of animal distribution.

I am about to commence the publication of a serial work in England, on the Natural History of the Pacific Islands, which will be furnished you from there.

My illustrated catalogue of the shells of the Sandwich Islands and their animals must be deferred for a time, as my collector on the islands south of the equator, who has been occupied near three years in searching them, informs me that he has been very successful, having obtained 600 new land and marine species, and discovered facts of great value to me in regard to distribution of species, &c.

I notice in your report of 1860 an announcement of the intended publication of several pamphlets on shells, three by Mr. Carpenter. The one on west coast species and one on United States expedition shells I particularly wish to see, as the latter I shall be able to correct. All pamphlets, however, on shells will be of use to me.

I beg strongly that duplicates of shells from the Indo-Pacific province may be sent me by the Institution; full value will be returned. Are there none left of Wilkes's expedition, or of Rodgers's Japan expedition?

All packages in future, please address to me and forward to Wells, Fargo & Co., New York.

Do not fail to make use of me in any way you may consider of value to the Institution.

Yours, most truly,

W. H. PEASE.

Professor JOSEPH HENRY.

The books and specimens referred to in this letter have been received at the Institution. The species of bat so remarkable, as being the only native mammal found on the Sandwich Islands, has since been identified by Dr. Gray, of the British Museum, as the *Lasiurus Grayi*, belonging to the coast of Chile.

—

HEADQUARTERS, GENERAL GRANT'S ARMY,
Jackson, Tennessee, November 5, 1862.

DEAR SIR: A large and perhaps valuable, but incomplete, herbarium has fallen into my hands, captured from the confederates, or, at least, belonging to

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some institution of learning, and wanting an owner. It consists of about a dozen thick folio volumes of plants belonging principally to *West Tennessee*, very neatly arranged. They were gathered together by a friend of mine, and as the soldiers were destroying them, I have taken charge of them, with a view of presenting them to some scientific institution. Please inform me if it would be worth while to send them to the Smithsonian Institution, and let me know whether I shall forward them by Adams's Express, so that they will go safely, and whether I must pay the charges, &c.

Respectfully, &c.,

H. R. WIRTZ,
Surgeon United States Army, Medical Director.

Professor HENRY,
Smithsonian Institution.

P. S.—I have them in a box about 3 feet by 2½.

The collection of plants above referred to has been received, and will be carefully preserved separately until the close of the war. No information has been obtained as to the original owner or collector.

—

LEIPZIG, *May* 31, 1861.

MY DEAR SIR: In sending back, through Dr. Flügel, agent of the Smithsonian Institution, the ferns which have been communicated to me by Dr. Eaton, in your name, I cannot omit to express my warmest thanks, not only for the kindness shown me in this instance, but also for the collection of ferns destined for the herbary of the university.

I am under a great obligation to the Institution for having given me an opportunity of examining these ferns, whereby it has materially assisted me in my studies.

Accept the assurance of my deepest gratitude and the highest esteem.

Yours,

G. METTENIUS, *Professor.*

Professor Dr. HENRY,
Secretary of the Smithsonian Institution.

The ferns sent back are the *uniques* of Brackenridge's collection, and will be placed with the rest of the collection now in Dr. Torrey's hands.

DANIEL C. EATON.

NEW YORK, *January* 13, 1863.

—

GENEVA, *Switzerland, May* 25, 1862.

DEAR SIR: Your letter of the 28th of February was duly received, and that it has not been sooner answered must be ascribed to the throng of pressing occupations in which I have been absolutely absorbed. I am under great obligations for the interest which you have been pleased to take in procuring for me the books and *duplicata* of your mammifers which I had requested.

In regard to the catalogue of the Hymenoptera, I regret to say that I have not reached it, having been engrossed by various other labors. I have commenced a large work on America, of which I have had the satisfaction of sending to the Smithsonian Institution the two first parts, the Crustacea and the Myriapodes. Since then I have been engaged with the Orthoptera, and have proposed next to proceed with the Hymenoptera. The plates of the Orthoptera will be forthwith sent to the engraver, but I have been dreadfully retarded by a succession of mishaps. My original draughtsman died; another whom I had

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trained quitted this service to engage in that of the railroads; a third found a lucrative place and left me to shift for myself, and the fourth threatens to do the same thing. Nevertheless, I hope to get through some day or other.

My taxidermist, whom I had left in Mexico to complete my collections, after having done nothing but cajole me for several years, has ended by leaving the country without sending me anything of consequence. All this has greatly hindered me. Still, my descriptive treatise on the Vespidæ of America is ready, but I wish to revise the manuscript and correct it from beginning to end, for it is my custom to leave my manuscripts in the drawer for one or two years and then remodel them by means of the materials I have in hand. It is only in this way that zoological works can be worthily composed. If you are urgent, however, I will leave the Orthoptera in order to take up the Wasps and will send you the manuscript this winter. Please indicate to me your wishes on this subject.

As to the other families, I cannot undertake them till I have done with the Orthoptera and the Wasps. But as you seem in haste, I think your best course would be to intrust this work to some American whose special line of study lies in that direction, and Mr. Edward Norton is well qualified for it. With the same view I have already prevailed on him to take in hand the Ichneumonidæ.

It would be impossible to make purely and simply a *catalogue* of the Hymenoptera. The number of known species is much too restricted. There would be needed a descriptive work, and you could not acquit yourself of it under less than ten large volumes. The labor upon the Hymenoptera is a colossal one. When I shall have published the Wasps, I will see whether I can undertake another family for you, and believe that I can; but, trust me, you must proceed *by families* or you will have nothing satisfactory.

I take this opportunity of informing you that in July I shall forward to you a package containing three memoirs of mine and my map of Mexico; and in addition, certain books for several learned Americans. Have you Saussure's Treatise on Hygrometry? Be so kind as to have the books distributed according to the address of each.

Please accept, dear sir, my cordial good wishes and the expression of my entire esteem.

D. H'Y DE SAUSSURE.

P. S.—If you have still any Vespidæ to send me to complete my manuscript, it will be necessary to do so soon, that I may be enabled to employ them as materials. My manuscript will form a volume in 8vo.

You will inexpressibly oblige me if you will have the recent American work on Tehuantepec sent to me.

We have since learned that the manuscript work on the *Vespidæ* or Wasps of America, mentioned in the foregoing letter, has been completed. It will be published as soon as practicable after it has been received and translated from the French

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NEW YORK, *September* 16, 1862.

DEAR SIR: My brother wishes me to address you in regard to a *cabinet of minerals* which he would like *to sell* to the Smithsonian Institution. He has a collection of minerals, mostly Californian and Mexican, between 2,000 and 3,000 in number, and containing about $1,500 in gold and silver. His reason for selling is, that it is entirely too valuable to retain in his office, as he is afraid of being robbed. He asks $3,000 for it, and refers to Professor Whitney, of California, for an examination.

You would confer a favor by returning an answer to this note when conve-

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nient; and perhaps, if the Smithsonian Institution does not want the collection, you may be cognizant of some other institution which might desire to obtain it.

Very respectfully, yours, &c.,

Professor HENRY. ———.

The foregoing is one of many propositions to sell specimens of natural history, &c., to all of which the answer has been made that the Institution does not purchase articles of the kind.

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The following letter was received from M. Romero, Mexican minister, in reply to a request made to him to furnish a letter to facilitate the explorations of Mr. Xantus, in Mexico:

WASHINGTON, *December* 4, 1862.

DEAR SIR: I have the honor to acknowledge the receipt of your letter of the 1st instant, informing me of the object of the appointment of Mr. John Xantus as United States consul at Manzanillo, and asking me to furnish him with such letter of introduction for the governors of the States of Colima, Michoacan, and the adjacent ones, as may help him in the prosecution of the scientific investigations he intends to make in a portion of western Mexico whose natural productions are very little known.

Being desirous to contribute to the success of Mr. Xantus's scientific researches and labors, I enclose you herewith letters of introduction for the governors of the States of Michoacan, Jalisco, Colima, and Sinaloa, which I hope will fully answer his purpose. Should he desire letters for any other governor, I will furnish him with them as soon as you let me know it.

As regards the entrance of the scientific apparatus Mr. Xantus may take with him to be used in making collections in natural history for the museum in charge of your Institution, I am happy to say that I think he will not have any difficulty with the customs authorities at Manzanillo, such articles being free from duty according to the Mexican tariff.

I am, sir, very respectfully, your obedient servant,

M. ROMERO.

Professor JOSEPH HENRY,
Secretary of the Smithsonian Institution, &c

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EULOGY

ON

HON. JAMES A. PEARCE, OF MARYLAND,

UNITED STATES SENATOR,

ONE OF THE REGENTS OF THE SMITHSONIAN INSTITUTION,

BY

PROF. A. D. BACHE, LL. D., Superintendent of the U. S. Coast Survey.

At a meeting of the Board of Regents of the Smithsonian Institution, held January 31, 1863, Professor Henry, the Secretary, announced the death of Hon. James A. Pearce, one of the Regents.

Prof. Bache, after appropriate remarks, offered the following resolutions, which were unanimously adopted:

Resolved, That the Board of Regents of the Smithsonian Institution deeply mourn the loss of their distinguished fellow-regent, JAMES ALFRED PEARCE.

Resolved, That in the death of Mr. Pearce our country has lost a refined and influential citizen, the Senate of the United States an able, judicious, honest statesman, and this institution an active, intelligent, and learned Regent.

Resolved, That we sincerely condole with the afflicted family of Mr. Pearce, and offer to them our heartfelt sympathy in their great bereavement.

Resolved, That a copy of these resolutions be communicated by the Secretary of the Smithsonian Institution to the family of the deceased.

On motion of Mr. TRUMBULL, it was—

Resolved, That Professor Bache be requested to furnish a copy of his remarks in relation to Hon. James A. Pearce, for insertion in the journal of the Board of Regents.

EULOGY.

Again has death invaded our circle, and taken from our councils and our active sympathies one of the most admirably gifted intellects which has at any time been called upon to shape the destiny or direct the labors of the Smithsonian Institution. A member of the executive committee from nearly the second year of the organization under the act of Congress of 1846, attentive to every detail, whether scientific, administrative, or financial, Mr. Pearce was always prompt at the call of every duty. His entire and cordial acquiescence in the form of organization adopted for the Institution, his liberal and zealous co-operation with the Board of Regents, his earnest support of, and unfaltering

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confidence in, the discretion and integrity of its Secretary, were as conspicuous as they were productive of the most lasting and important benefits. And though it is true that the general form and policy of the Institution were determined under the authority of Congress, by its first Board of Regents, yet it is quite as certain that strenuous action was afterwards needed to maintain it in its adopted course, and secure it from projected innovations which, though strenuously advocated at the time, few now regard with aught but disfavor. To this end no one lent more effectual aid than our lamented colleague. Although, from taste and the conditions of his active life, he might more properly be styled a literary man, yet were his scientific attainments by no means inconsiderable, and a liberal and cultivated mind, which admitted of no narrow views, enabled him to embrace, in all its comprehensive simplicity, the idea of the generous foreigner who, in founding this Institution, consecrated his fortune to "the increase and diffusion of knowledge among men."

In whatever Mr. Pearce engaged he exhibited the same spirit. Marked as a leader from his boyhood, at school as at college, in his profession as in the councils of the nation, in his neighborhood, his State, his country, as well as in the church to which he had dedicated his faith, he stood distinguished for an enlightened estimate and an efficient support of whatever is elevated and calculated to elevate. To him the work of construction was ever far more congenial than that of demolition; to improve and preserve was an instinct, to confound and destroy, an innate aversion of, his nature. Refined in his tastes, brilliant in society, instructive from the affluence of his ideas and extent of information, without ostentation as without pretension, social, genial, even playful among his intimates—such was the associate whom we must long mourn, feeling that at the council board as in the familiar and friendly circle, we have lost one who strengthened us in our adhesion to what is right, good, or true, while ever prompt to lead us wherever progress held out rational hopes of improvement.

Generally, men of the temperament we have described are impatient of details; but this was not at all so with our departed friend. It afforded him pleasure to systematize and reduce to order even the dry details of finance, and a wonderful memory and a quick perception enabled him to pass them in rapid review with a scrutiny of every particular. His mental vision was as minute as comprehensive, and his analytical faculty never dismissed a subject of investigation until he was thoroughly satisfied with the arrangement, the method, the results: in a word, he was content with little less than the perfection of whatever occupied his attention or claimed his solicitde.

The objects which in Congress occupied most of his attention, and which it gave him most pleasure to defend and sustain, were those connected with literature and science, and in these he showed the same qualities which as chairman of our executive committee he has here so often exhibited. With the great interests of state and the high objects of national politics he was abundantly qualified to grapple; in fact, he shrunk from no occasion in which to exert himself when enlarged views and skilful powers of debate could be rendered serviceable to his country or the world. But if duty called upon him from time to time for such efforts, still it was to objects promotive of art and science and high civilization, to means for man's moral and intellectual improvement, and for the enlargement of his knowledge and power over nature, that he turned with ever new and unwearied interest. To him probably more than to any other senator the library of Congress was indebted for the augmented fund which it has now for some years enjoyed, and for the care taken in the selection of the materials which render its shelves so useful. The exploring expedition was more than once indebted to his earnest and persistent efforts for the continuance of the means of publication of its results; the Coast Survey for expositions of its importance to the country and the world; the Smithsonian for warding off assaults, and reconciling enthusiastic but misguided opposition; the naval and military expe-

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ditions, boundary surveys, and explorations, for close, searching investigations, which led to important improvements and to cordial support. The great work of the extension of the Capitol found in him a wise advocate and judicious friend. Not afraid of what was new, he yet aimed at nothing for the sake of novelty. In connexion with the decoration of our public buildings, our sculptors and painters found in him a most enlightened appreciator of their works, and one always ready to promote the great cause of their art by legitimate means.

He had a remarkable power of attaching to himself men of science, literature, and art, and, in return, found in them some of his most intimate and highly-prized companionships. His friendships were warm, and once formed, were proof against all trials of absence or change of fortune. Many of his ardent attachments reverted to the friends and associates of his parents, and to family relations of even an older date, acquiring in his breast a sacred title by the claims of the past.

The genial elements of his character naturally expanded most freely in the circle of his family and friends, where he was truly and ever at home. His garden, its fruits and flowers, were his habitual delight; his farm and its operations seemed to touch by association the springs of his deepest affections. He superintended every process with a judgment rarely at fault, and watched all the varied developments of nature with the interest of the amateur or the naturalist. Whoever had not seen Mr. Pearce in his dwelling, in his garden, or upon his farms, knew him but imperfectly.

James Alfred Pearce, the colleague, the counsellor, the friend, to whom we must now bid a final adieu, was born in the town of Alexandria, then part of the District of Columbia, December 14, 1805. His parents, who were of Scottish descent, and citizens of Maryland, dying during his childhood, the care of his education devolved upon his maternal grandfather, the late Dr. Dick, of Alexandria, an eminent physician of that day, who will be remembered by the student of American history as having been one of the medical attendants who ministered at the dying bed of Washington. So rapid yet thorough was the progress of the young student in the rudimentary stages of education, that he graduated at Princeton College at the boyish age of seventeen, bearing away from competitors of no ordinary ability, and much subsequent distinction, the highest honors of his class. Having adopted the law as his profession, and permanently settled at Chestertown, Maryland, the former residence of his parents, he soon received the earnest of future success in the confidence, affection, and support of the community—a community to whose favor he might, indeed, already look forward in virtue of the memory of a meritorious and distinguished ancestry. His first step upon the more public stage which was thenceforth to be the scene of his labors and success was his unsolicited election to the legislature of Maryland, in 1831. From that day, with a single interval of two years, his talents and time were devoted to the service of his fellow-citizens in the halls of legislation, his career having led him, by a progression founded on the uncanvassed but ever-increasing confidence and respect of the people, through the House of Representatives to the Senate chamber, in which he was fulfilling the unexpired term of a third election at the period of his death.

His characteristic qualities and tendencies as a legislator have been already slightly touched upon in this memorial, but whoever recalls the momentous events, the gigantic and often acrimonious struggles for ascendency, the portentous and brilliant debates which, from 1835 to 1861, fixed the public attention, and excited the alternate hopes and fears of contending parties; whoever pictures to himself the majestic forms which then occupied the legislative arena, will remember that, through all these events, and measuring himself in no unequal competition with the foremost men of that earnest time, our colleague continued to advance steadily in public appreciation, to fill a yet

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wider and wider space in the eyes of the country, that on him rests no imputation of having ever purchased favor or advancement by a sacrifice of the slightest principle, or of having once deviated into any of those equivocal positions which sometimes bring disrepute on illustrious names; whoever shall recall and consider these things will undoubtedly be qualified to form a more adequate and vivid conception of his labors and his worth than could be derived from any portraiture which this occasion would permit, or perhaps even the most labored eulogy could supply.

Nor were striking testimonials wanting to his peculiar and conspicuous merits: it rested but with himself to have occupied positions of the highest public distinction. A place in the cabinet and a seat in the federal judiciary were successively offered him; on more than one occasion his name was publicly canvassed in connexion with the presidency of the United States. The former, however, he declined; the latter he steadily discountenanced. He seems to have felt that the Senate chamber was the proper sphere for his peculiar tastes and powers—a sphere equal to his well-regulated ambition, not below his admitted merit. The patronage incident to the executive branch of government involves much that would have been repugnant to his feelings; the judiciary has objections peculiar to itself in the ever-recurrent and monotonous nature of its functions; the representative department of Congress was for him too much influenced by the fluctuations of popular opinion. The Senate, in the stability of its tenure, and the vivacity and variety of its discussions, in its character of a consultative and executive as well as legislative body, in the dignity and importance of its deliberations, involving the interests of States and the relations of national intercourse, seemed exactly fitted to give scope to his abilities, and to satisfy every aspiration he might indulge for usefulness or consideration. Perhaps it was in the committee-room that his influence made itself more particularly felt, for here the extent of his information, the weight of his character, the directness and integrity of his purpose, his patience for details, his familiarity with the forms of business, and aptitude in applying them with logical acuteness to the disentanglement of questions of fact and law, his co-operative spirit, his genial and companionable nature and manner, all conspired to give authority to his decisions, and to conciliate reliance and acquiescence on the part of those with whom he acted.

Had Mr. Pearce not embraced the profession of law, he would doubtless, under suitable circumstances, have been celebrated as an agriculturist. Had he not resigned himself to political life, he could not have failed of eminence in science or in literature. It is indeed rare to meet with one whose capabilities and excellencies were so varied and so distinct, nor is it possible that, knowing him as I have done, I should speak of him otherwise than frankly and from the heart, though conscious of the imperfect representation which I have been able to give of a man so intrinsically great in all the elements which constitute true greatness, so entirely beloved for all that refers itself to the amenities of social intercourse and the sacred endearments of home.

In conclusion, it is proper to add that the peculiarities which marked his character during the active years of his life exhibited themselves in the closing period of his career under a new but harmonious aspect. Afflicted with an incurable malady, he contemplated his approaching end and endured his intense suffering with the unwavering faith and resigned patience of a Christian. The religious principles which he had imbibed in childhood, and which had perhaps imperceptibly formed the basis of his character, became the dominant objects of his thoughts, and the consolation and happiness of his last hours.

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JOURNAL OF PROCEEDINGS

OF

THE BOARD OF REGENTS

OF

THE SMITHSONIAN INSTITUTION.

WASHINGTON, *January* 20, 1864.

In accordance with a resolution of the Board of Regents of the Smithsonian Institution, fixing the time of the beginning of their annual session on the third Wednesday of January of each year, the Board met this day in the Regents' room, at 10½ o'clock a. m. Present: Hon. S. S. Cox, Hon. J. W. Patterson Hon. R. Wallach, General J. G. Totten, and Professor Henry, the Secretary.

A quorum not being present, the Board adjourned to meet on Monday, January 25, at 7½ p. m.

MONDAY, *January* 25, 1864.

A meeting of the Board of Regents was held this day at 7½ o'clock p. m Present: Hon. H. Hamlin, Vice-President of the United States, Hon. W. P. Fessenden, Hon. L. Trumbull, Hon. J. W. Patterson, Hon. H. W. Davis, Hon. R. Wallach, Mr. William B. Astor, General Joseph G. Totten, Professor A. D. Bache, the treasurer Mr. Seaton, and Professor Henry, the Secretary.

In the absence of the chancellor, Mr. Hamlin was called to the chair.

The Secretary announced the election, by joint resolution of the Senate and House of Representatives, of Professor Agassiz, of Massachusetts, as a Regent in place of Mr. Badger, the reappointment by the Speaker of Hon. S. S. Cox, of Ohio, and the appointment of Hon. J. W. Patterson, of New Hampshire, and Hon. Henry Winter Davis, of Maryland, as Regents from the House of Representatives.

The general statement of the funds of the Institution and of the receipts and expenditures during 1863 was presented by the treasurer.

The Secretary submitted the annual report of the operations of the Institution during the past year, which was read in part.

The Secretary made a statement as to the policy which had been adopted in regard to bequests and donations having special conditions attached to them,

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and gave the reasons for declining to accept a herbarium which had recently been bequeathed to the Institution.

On motion it was

Resolved, That the action of the Secretary in this case be approved.

The Secretary called attention to the unexpected delays and embarrassments which had occurred in obtaining the remainder of the original bequest of Smithson left in England as the principal of an annuity to the mother of the nephew of Smithson, and read the correspondence on the subject with the attorneys, and also a letter from Hon. C. F. Adams, the American minister to England.

On motion it was

Resolved, That a committee be appointed, consisting of the Secretary, Mr H. W. Davis, and Professor Bache, to confer with the Secretary of State and the British minister relative to the action of the English authorities in regard to the money due the Smithsonian Institution.

On motion, the Board adjourned to meet on Wednesday, January 27, at 7½ o'clock p. m.

WEDNESDAY, *January* 27, 1864.

A meeting of the Board of Regents was held at the Institution at 7½ o'clock p. m. Present: Hon. H. Hamlin, Vice-President of the United States, Hon. G. Davis, Hon. R. Wallach, Mr. William B. Astor, Professor A. D. Bache, and the Secretary.

Mr. Hamlin was called to the chair.

The minutes of the last meeting were read and approved.

Professor Bache presented the report of the executive committee, which was read and approved.

The Secretary presented the remainder of his annual report, which was read and adopted.

He also presented a series of letters illustrating the correspondence and operations of the Institution.*.

On motion, the Board adjourned to meet at the call of the Secretary.

TUESDAY, *March* 15, 1864.

A meeting of the Board of Regents was held this day at 10½ o'clock a. m. Present: Hon. H. Hamlin, Vice-President of the United States, Hon. S. S. Cox, Hon. J. W. Patterson, Hon. R. Wallach, Professor L. Agassiz, Professor A. B. Bache, and the Secretary.

Mr. Hamlin was called to the chair.

The minutes of the last meeting were read and approved.

The Secretary presented a series of works on natural history, which had been prepared and printed at the expense of the Institution, and also the

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manuscripts of several others which had been offered for publication. All of these, he stated, had been referred for critical examination to Professor Agassiz, who would favor the Board with some remarks in regard to them.

Professor Agassiz stated that, so far as he had had an opportunity of examining the original papers, he considered them worthy of publication; that he would give the whole series of works on natural history, which constitute portions of what is called the Miscellaneous Collections, a critical examination, and present a report upon them at a future time. At present he would beg leave to make a few remarks on the importance of adopting measures for increasing the efficiency of the active operations of the Institution by relieving them of the expense of the support of the museum, library, and gallery of art. Unless this could be done, many valuable contributions to science offered for publication would have to be postponed or refused. He thought that the resources of the Institution were inadequate to carry on at the same time its active operations, and maintain a museum, a library, and a gallery of art upon the only footing upon which they can truly be creditably supported. Without, therefore, making a definite motion, he would submit for future consideration the propriety of asking the government to take charge of the museum, the library, and the building now occupied by the Institution, with a view of maintaining them on a more extensive scale, and relieving the Smithsonian Institution of a large expenditure which, for the advancement and diffusion of science, had better hereafter be devoted to the active operations of the Institution. He hoped that if such a plan would be carried out, the resources reverting to the Institution from the transfer of the museum and library to the government, either to form an independent organization or to be carried on hereafter as before by the Smithsonian Institution, the active operations of the latter would be greatly extended.

The Secretary stated that the suggestions of Professor Agassiz were in accordance with the views which had been entertained by the majority of the Board of Regents from the first discussion of the organization of the Institution; that the present disposition of the funds was a necessity which was imposed upon the directors by the requirements of the law of Congress establishing the Institution, and that he had always entertained the hope that the support of the building and collections would in due time be provided for by the general government, and a national museum be founded which would be commensurate with the intelligence, extent, and resources of the country.

Professor Bache fully concurred in these remarks, and moved the following resolutions, which were adopted:

Resolved, That a committee be appointed to report to the Board of Regents any suggestions for extending the active operations of the Smithsonian Institution, and for the separate maintenance of the collections.

Resolved, That this committee consist of Professor Agassiz, the Secretary of the Institution, Mr. Fessenden, Mr. Patterson, and Mr. Cox.

The Board then adjourned *sine die*.

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LETTERS PRESENTED TO THE BOARD OF REGENTS TO ILLUSTRATE THE CORRESPONDENCE AND OPERATIONS OF THE INSTITUTION.

Communication from Dr. B. A. Gould, on a new discussion and reduction of the observations of Piazzi of Palermo.

CAMBRIDGE, *May* 16, 1863.

MY DEAR SIR: For many years I have been strongly convinced that an extremely valuable contribution to astronomical science might be made by a new discussion and reduction of the observations of Piazzi at Palermo.

This eminent astronomer, with his assistants, was engaged, during the twenty-two years from 1792 to 1813, in observing the positions of the principal fixed stars. He was provided with the best instruments which could be obtained at that time, and his observations have been, and must continue to be, our principal and most trustworthy source of information as to the places of between seven and eight thousand fixed stars at the beginning of the present century. As nearly as I can estimate without an actual count, he must have made about ninety thousand determinations of right ascension, and from sixty to seventy thousand of declination, the original records of which observations still exist. From these he constructed his two well-known catalogues—the first in 1803, the second in 1814—containing the mean places for 1800.0 of 7,646 stars.

His methods of observation, while, of course, far inferior in many respects to those of the present day, were the best in use at that period; and the care and fidelity with which they were used seem to have been unsurpassed; and, although the reductions upon which the catalogue was based seem to have been incommensurate in precision with the observations themselves, still this catalogue has, for the past fifty years, been a standard authority with astronomers, and, for a great part of that time, their chief dependence for both the right ascensions and declinations of stars.

The original observations of Piazzi were sent by him for safe keeping to his friend Oriani, in Milan, and have been carefully preserved at the Observatory of the Brera in that city. In 1845, Professor Littrou, the director of the Imperial Observatory of Vienna, incited specially, as he says, by Argelander, and encouraged by Bessel, Gauss, Schumacher, Struve, &c., commenced the printing of these original observations as part of the series of Annals of the Vienna Observatory, and they have thus been for several years accessible to astronomers.

When organizing the Dudley Observatory in 1856–'58, it formed an integral part of my plan, not merely to institute new observations of the heavenly bodies, but to carry on such computations, reductions, &c., as might render available past observations of this and the last century, which would otherwise be either useless or of inferior value to astronomy. Various undertakings of this kind were planned, but the first of all to be begun was the re-reduction of the whole series of Piazzi's observations, using the best values of the constants of precession, aberration, and mutation, and investigating all the instrumental errors with care; and I made considerable progress in arranging the details of the computation. After communication with Professor Littrou, and an extended correspondence with Professor Argelander on the subject, in which this distinguished astronomer gave me many very useful suggestions, the whole plan was completed, and, but for the misfortunes which interfered with the usefulness of the Dudley Observatory before its activity had fairly begun, the new catalogue would doubtless now have been in the hands of astronomers.

My health and opportunities of labor being now greatly improved, I am anxious to resume this work, and write to ask for your influence and aid, as far as possible, in furtherance of the plan. Knowing, as you do, the nature of the

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work proposed, it is almost needless to dwell upon its value to science. The one consideration, that Piazzi's observations must, for long years to come, furnish the only means of determining the proper motions of more than five thousand stars, is of itself sufficient. For the other stars observed by him, they constitute a most important element in the determination. The huge number of stars, observed in zones by Lalande, at almost the same period—more than fifty thousand—depend for their reduction and value almost solely upon Piazzi's results; and the formation of a new catalogue of the latter will give an altogether new value to the results of Lalande. The great mass of independent observations thus rendered more accurate can speak for themselves, and it is manifest that their usefulness will be far greater than that of the same number of new observations made now.

Unfortunately, Piazzi's observations do not afford all the elements now known to be needed for their reduction, and it will doubtless be necessary to reduce them differentially, thus greatly increasing the labor. Not merely questions of azimuth, zenith point, and clock correction, but also questions of graduation, of irregularity of pivots, and even of refraction, must be discussed, thus rendering the undertaking one of no small magnitude; still it would, I am sure, be labor well bestowed, and, as Professor Argelander wrote me in 1857, "it would be a grand thing, * * * * and one of the most important things that could be done."

The first process required is the reduction to the mean equinox of 1800.0 of all the observations just as they were given by Piazzi. This is a work which could be carried on by ordinary computers, and would in itself be of great service, even were the discussions of the observations to be omitted. It would constitute nearly two-thirds of all the labor, and possesses the great advantage that whatever is done, be the amount large or small, is immediately available. The best estimate that I am able to make gives about $5,000 as the probable cost of this reduction, to which from one-quarter to one-third should be added for the expense of checking, comparing, and correcting mistakes. Therefore, before beginning, I desire to make sure that at least $6,000 will be available for the purpose. There is scarcely a limit to the number of computers who could be employed at once upon this part of the work. It might easily be accomplished in a single year, or it might be slowly and regularly carried on for a long time, the expense being not very different in the two cases.

This process being completed, the remainder of the work, consisting of various investigations, in addition to the discussion of the instrumental corrections, and the formation of a catalogue from the observations after all reductions have been applied, would, of course, require more deliberate study. It would probably occupy at least two years, but I think the expense would be decidedly inferior to that of the first process. Indeed, I have convinced myself that all the outlays needed for the whole undertaking in all its branches would not exceed $10,000, and that if this sum were now available, the work might be completed in two years, inasmuch as parts of all the processes could go on simultaneously.

My sense of the usefulness of this work, and my conviction that astronomers everywhere would agree in this opinion, are so strong that I have determined to appeal to you for aid, well knowing that your interest and moral support will, under any circumstances, not be wanting. It is precisely such an undertaking as the plan of the Smithsonian Institution would lead it to encourage; and although I can readily see that the amount needed is larger than the Smithsonian would probably be able to apply at any one time to the furtherance of any one science, still I come to you with my plan, well assured that you will willingly do what you can in its behalf, whether by some gradual appropriation year after year, from the Smithsonian funds, in aid of what I have called the first process, viz.: The computation of the correction to the mean equinox of

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1800.0, or in some still more active way, by enlisting interest and securing aid from other sources.

For several months past I have devoted such time and means as I could to the preliminary steps, and, as you are aware, I now desire only the means of defraying the indispensable outlays, wishing to contribute my own services in behalf of the work.

I am, dear sir, very respectfully and truly yours,

B. A. GOULD.

Professor JOSEPH HENRY,
Secretary of the Smithsonian Institution.

Project of an outline history of public education in the United States, by Frederic A. Packard.

The proposed volume to contain from 600 to 800 pages royal 8vo, to be put up in a cheap form, in the manner of legislative documents, with ample tables, indexes, &c., for easy reference. If it shall be thought best, the form might be changed to *two* volumes—one embracing the original thirteen States, and the other the remaining States and Territories. The plan of the work would comprise the following topics:

I. *Of universal education*, considered as an essential element of free political institutions, what should be its character and extent?

II. An historical sketch of the laws of the several States on the subject of education, and the establishment of public schools, academies, and colleges. In this connexion would be given the provisions for education under the colonial government, and their influence on succeeding legislation.

III. An abstract or synopsis of all laws now in force in the several States touching public education, and of contemporaneous judicial expositions of the law, so far as they affect the essential principles of the system.

IV. A sketch of the present state of public education in the country:

(a.) Of the *division of territory* for school purposes, what and how made?

(b.) Of the manner of *raising money* for the support of schools, and the amount raised and expended in each decade of years, of the present century.

(c.) Of the *permanent revenue* for the support of schools—if derived from a fund—when and how was such fund created, and what is its amount and investment? what portion of the annual school expense is derived from it, and what is its effect to stimulate or depress the working of the system?

(d.) Of the number and average age of *children* under instruction, distinguishing the sex; the number in attendance, in proportion to the whole population, and the average time of attendance.

(e.) Of the mode of employing *teachers* and determining their qualifications.

(f.) Of the *number* of teachers employed, distinguishing the sex; the compensation allowed; the average age of teachers, male and female separate; and the average amount of time employed in daily teaching, making distinct heads of summer and winter schools.

(g.) Of the *branches* taught in the public schools, and the proportion of time devoted to each.

(h.) Of the preparation and introduction of *school-books;* character of them in early schools—improvements in them; expense of them, and by whom borne; and the number and variety of them, in the different branches, which are in use in the different schools.

V. Of *normal schools*, number, when organized, how supported, number of pupils, terms and condition of admission; what proportion of pupils pursue teaching for a livelihood, and what proportion of these succeed.

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VI. Of *school-houses*, their number, average capacity, manner and means of building, and improvements in respect to site, ventilation, heating, furniture, out-houses, &c., &c.

VII. Of *school libraries*, number of schools supplied with; how and by whom selected; funds to purchase, and the amount and source of the same; number and character of volumes; cost, mode of distributing, preserving, and extent of circulation.

VIII. Of the *religious element* in public schools; if less than formerly, why? To what extent necessary and practicable?

IX. Of *popular manners and customs* in the schools; habits of thinking and acting; domestic and social character, and qualifications for citizenship, as they are influenced by our systems of public education.

X. Of *physical education*, what time appropriated to it; what facilities and encouragements are afforded; what methods adopted, as drill, gymnasium, or athletic games; and what part teachers take therein.

XI. Of *infant schools*.

XII. Of *Sunday schools*.

XIII. Of *colleges and other public literary institutions*, so far as they afford aid to, or receive aid from, the public schools.

XIV. Of the comparative *expense* and *value* of public education at different periods of our history.

XV. Of *lyceums, mechanics' institutes, evening schools*, and other methods of adult education, to make other means of education available, or to compensate for the want or neglect of early advantages.

XVI. *Number of persons of school age that are under instruction*, the proportion of the population that can both read and write; the qualifications of the pupils, upon leaving school, to engage in the active pursuits of life, with a superior *physical, moral*, and *intellectual* character.

The materials being thus collected, would be arranged under the title of each State, respectively, whatever is peculiar in its educational history and statistics being placed under specific heads, and what is common to all under general heads.

For example, *Maine* might occupy the first chapter or section of the volume—and we should first refer to Massachusetts for all matter preceding 1820, when it ceased to be a province. Then would come a succinct account of all legislation on the subject, including an abstract of existing laws; then the origin, amount, and mode of distributing any school fund. Next, a bird's-eye view of the actual condition of the schools, government, discipline, construction of buildings, character of teachers, text-books, and the obvious fruits of the system. Whatever peculiarity there may be in the climate, in the habits and pursuits of the people, or in the condition of society, affecting favorably or otherwise the interests of education, would find a place in this connexion.

After completing the circle of States in this way, a condensed chronological, historical, and statistical survey of the entire country would be in place, and such principles or conclusions as are established by the facts stated and illustrated.

It will be observed that the plan contemplates the history of each State *complete in itself*, and if prepared by an individual selected for the purpose, might bear the author's name, like contributions to a biographical dictionary or an encyclopædia. Of course it would serve a valuable *local* purpose, and if properly prepared, would secure a share of public patronage, while the *whole* volume would furnish highly interesting and important information to the country at large and to foreign inquirers.

When the outline thus sketched is well digested and matured, my purpose would be to forward a schedule of the subjects to some qualified patriotic person in each State, requesting his co-operation. The great advantages of having the

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work done by a resident of the States, respectively, are the accuracy, fidelity, and fulness which would be secured, the facilities for obtaining materials, and the authority which it would bear. These considerations might induce one or more suitable persons in each State to encounter some personal inconvenience, especially as the service is one of vast and permanent importance, and can be better done now than at any future period.

The President of the Chamber of Commerce of Bordeaux to the Secretary of the Smithsonian Institution at Washington:

SIR: I am not ignorant that the Institution of which you are the Secretary, and which labors with the most praiseworthy zeal to promote the progress of the different branches of human knowledge, maintains relations of exchange with the Imperial Academy of Sciences, Belles Lettres, and Arts of Bordeaux.

The Chamber of Commerce, anxious in its turn to co-operate, as far as possible, in the realization of the plans which you pursue, feels pleasure in transmitting to you a copy of its publications. They comprise a collection of its proceedings since 1850, the first volume of the catalogue of its library, &c. It is hoped that these various publications will find a place in your collections. The Chamber has, on its own part, founded a considerable library, which is open to the public, and it would be happy if the Smithsonian Institution should think proper to send us some of the volumes which it publishes, and which are filled with documents of the greatest interest on America, and on different questions of importance. These works would thus be at the disposal of a considerable number of studious persons, and they would contribute to make the services of the Institution of which you are the organ appreciated in all their extent in Europe. Be pleased, sir, to accept the assurance of my most distinguished consideration.

CARTE DEL PALASIO, MILAN,
October 31, 1862.

SIR: Through the kindness of your agent, Mr. Bossange, of Paris, we have received the Annual Report of the Board of Regents, presented by the great and liberal Smithsonian Institution to the Carte del Palasio's Agricultural Association, of which we are directors and regents. Reading your valuable report, we have seen with the greatest satisfaction that the interesting and useful results of your labors have been approved and commended by intelligent men everywhere. Whilst expressing, honored sir, our warmest thanks for having been deemed worthy by your Institution to participate in the gifts which the liberality of the Smithsonian Institution renders to men devoted to science, it will be a source of pleasure to us to endeavor to reciprocate your kindness. To promote knowledge and facilitate its progress by stimulating men of science to undertake general and extensive researches, and to offer the means of continuing them, is the most useful service which can be rendered to mankind. The very extensive means which your great Institution has at its command, the ardor with which your officers and regents began and continue their difficult work, are infallible indications of the greatest results which will be produced. And we do not doubt that the material and moral progress of individuals, with that of science in general, will fully realize the anticipations of the founder, and amply recompense the continued labors of the distinguished directors of the Smithsonian Institution.

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As directors of a new institution, which we hope will also soon produce important results in agriculture, we shall be content if, in reciprocating your kindness, we can also in any way serve the laudable purposes of your Institution by presenting the results of our own labors and researches.

Again expressing our thanks, we have the pleasure of sending some of the publications relating to our institution, with the hope that they will be placed in the Smithsonian library. They are the following: 1. Programme of organization of the Carte del Palasio's Agricultural Association. 2. Annual Reports of the Association for 1859–'61. 3. Agricultural Annals, by Dr. Gaetano Cantoni, professor of agronomy.

* * * * * * * * *

Your most obedient servants,

SIG. ANTONIO RESCHIN, *Direttore.*
DR. GAETANO CANTONI, *Professor.*

OFFICE SUP'T U. S. MILITARY GENERAL HOSPITALS,
Memphis, Tennessee, September 5, 1863.

MY DEAR SIR: I am in receipt of your letter of the 25th ultimo, by which I learn the pleasing intelligence that the "great Tucson meteorite" is in a fair way of getting to Washington at last. I am sure you will feel proud of it when you see it. I knew the "Carlton specimen" was not ours, as I had sent it to Hermosilla before I left Arizona. That sent in by General C. is about 750 pounds, while ours is about twice that weight.

The only history I can give you is a vague one, as there is no written record of its advent in Tucson. The old inhabitants of that place all agree that it was brought there from the Santa Catarina mountains, which lie to the north of Tucson, about midway between the Rio San Pedro and that town. It was brought in by the military stationed at the old *presidio*, where it remained until after the withdrawal of the Spanish garrison. It was then taken into town, set up on end, and used as a kind of public anvil for the use of the inhabitants. The smaller one was used in a blacksmith's forge for similar purposes. In 1857 I found the large one lying in one of the by-streets half buried in the earth, having evidently been there a considerable time. No person claimed it, so I publicly announced that I would take possession of it in behalf of the Smithsonian, and forward it whenever an opportunity offered. Mr. Palatine Robinson, near whose house the iron was, assisted me in getting it sent to Hermosilla. There was some expense attending its hoisting into the truck-wagon that took it down to Sonora, which I paid to Mr. R. Mr. Ainsa agreed to take it, or have it taken, to Guaymas, Sonora, for fifty dollars.

The people of Tucson all agree that a shower of these meteorites fell in the Santa Catarina mountains some two hundred years ago, and I have been told that there were plenty of them remaining in the mountains. I never was in the immediate portion of the mountain range where they report the specimens are to be found, so I cannot vouch for the correctness of their reports. As the country is volcanic almost entirely, I have often thought, from the fact that iron ore is abundant in several of these mountains, that it might have been that masses of iron mineral were reduced to the metallic state by volcanic heat. See in the case of the famous "Planchas de plata" silver mines, some one hundred miles south of the Santa Catarina, where large pieces of pure silver have been found reduced to the pure state by fire, which has left everything in its vicinity in a state of calcination. One piece weighing 1,500 pounds was found and cut in two to allow its removal to the city of Mexico by the Spanish authorities. I think you will find allusion to those interesting and once rich mines in Brantz Mayer.

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I believe I have given you some data about the Tucson meteorites in a monogram published by the War Department in 1860; Medical Statistics of United States Army, 1855–'60.

I wish I could give you full information on this matter. Please let me know when you receive it, and be assured that when I go to Washington I will pay my respects in person to you and it.

I am very busy, so you will excuse this hurried letter, and believe me

Yours, very respectfully,

B. J. D. IRWIN,
Surgeon United States Army.

SAN FRANCISCO, CAL., *July* 2, 1863.

DEAR SIR: The aerolite which had remained so long at Alamito, for want of a proper person to bring it here, was brought by one of my brothers, Jesus M. Ainsa, who visited Sonora lately. We have been induced to retain it here for a short time, to satisfy the curiosity of the San Francisco people. The State Geological Society asked to be allowed to have a small piece for their collection, which request was, of course, granted. With this exception the aerolite has been preserved entirely in the same condition in which it was found in Arizona, and by the 13th of this month we will have the pleasure to ship it to New York, under the care of the Pacific Mail Steamship Company.

I take this opportunity to offer my services to the Institution.

I remain, respectfully,

SANTIAGO AINSA.

Professor HENRY,
Smithsonian Institution, Washington, D. C.

SAN FRANCISCO, CAL., *August* 26, 1863.

DEAR SIR: I have the pleasure to acknowledge your favor of July 31, and I take pleasure in complying with your request. In fact I intended to do this before, but, owing to many engagements on hand, I have been postponing it to this moment.

I announced in my last that the meteorite would be sent by the following steamer from that date; but we were asked to retain it some time longer by some scientific men, who wished to examine it closely.

The history of this aerolite we have from our grandmother, Doña Ana Anza de Islas, daughter of Don Juan Bautista Anza, our great grandfather. The Jesuit missionaries had the earliest knowledge of this curiosity. There were various theories entertained about it; but it was generally believed to proceed from some iron mine in the vicinity, which belief holds to this day in Sonora. In an expedition made by Don Juan Bautista Anza, then "Gran Capitan de las Provincias del Occidente," about the year 1735, to the country about Tucson, he was induced to visit the aerolite, and he undertook the work of transporting it to Spain. The place where it was found is called "Sierra de la Madera," on a spot called Los Muchadios. Through the want of proper means and the bad state of the roads, (having to carry it to San Blas, then the nearest port of entry,) the work of transportation was given up, and they were satisfied to take it as far as Tucson. There it remained ever since, until my brother, Agustine Ainsa, undertook to transport it, in 1860, and present it to the Institute. His intentions, however, were never carried out until May last,

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when another of my brothers, Jesus M. Ainsa, visited Sonora and brought it with him on his return.

By the time of the receipt of this the aerolite must be already in Washington, as we delivered it to the agent of the Institute about a month ago, to have it transported to you. Your agent spoke to us about expenses; but we wish not to deprive ourselves of the honor of having presented it to the Institute, and as such we desire that you should accept it.

I would be thankful if you would send me a copy of the analysis, and of other information about the aerolite; and if you find it not too troublesome, to send the same, with my compliments, to St. John's College, Fordham, New York, where I was educated.

I have the honor to remain, your obedient servant,

SANTIAGO AINSA.

JOSEPH HENRY, Esq.,
Smithsonian Institution, Washington, D. C.

[This meteorite is now in the museum, and is an object of special interest to visitors.]

LITTLE GLACE BAY, CAPE BRETON, NOVA SCOTIA,
October 25, 1863.

MY DEAR SIR: I send you a specimen of "cone-in-cone," which I have lately obtained in sinking a shaft at this place upon the Harbor Vein seam of coal described in Professor Lesley's report of this coal-field last year.

It was found in the band that corresponds to the black bituminous shales below the one inch of cannel coal, and 23 feet above the Harbor series of five feet of coal.

It was only obtained on the northwest side of the shaft, thinning out to the south and east, or towards the "crop." The greatest thickness of the bed was about 7 inches. The largest "cone-in-cone" was 5½ inches in diameter.

The journal of the strata sunk through differs somewhat from Professor Lesley's taken at the shore.

	ft. in.
At the shaft-drift and gravel	10.0
Blue shales, with cyclas shells, fish teeth, and other remains	3.0
Cone-in-cone	.5
Brown band, with coprolites	.3
Blue arenaceous shales	1.0
Hard white sandstone	2.0
Thin bands of shales "fucoids"	3.2
Hard sandstone	.4
Blue arenaceous shales	2.6
Sandstone, black mark, like the fruit "cardeocarpon"	1.04
Sandy shales	.11
Hard blue shales	3.10
Blacker band	.4
Fire-clay and ironstone balls	7.5
Coal	5.5
	41.11

I cannot find in any work that I possess anything exactly like them, so think they may be of interest to add to your museum.

The points of the cones are downwards.

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I shall be glad to hear from you about them after they have been examined. I have sent a specimen to Dr. Dawson, Montreal, but fear the season is too late for him to get it this year.

I remain, my dear sir, your obedient servant,

HENRY POOLE.

JOSEPH HENRY,
Secretary Smithsonian Institution, Washington.

The above relates to a very interesting specimen of a remarkable concretion of a clayey material, which occurs in thin slabs, entirely formed of cones, the axes of which are all at right angles to the parallel surfaces of the slabs. The only explanation which occurs to us of the mode of formation of this structure is that of percolation of water charged with earthy material through a porous rock, and filling a horizontal crevice with parallel sides, with a series of stalactites and stalagmites. J. H.

HUNGARIAN NATIONAL MUSEUM,
Pesth, October 15, 1863.

SIR: In reply to your esteemed letter of the 29th of May, I have the honor to inform you that the birds sent us through Dr. Flugel have been duly received, and I beg leave to return the heartfelt thanks of our institution for the same. Full acknowledgments have also been made in our reports, and in the newspapers, of our obligations to the Smithsonian Institution, which stands so high in public opinion everywhere.

AUGUST V. KUBINYI, *Director.*

JOSEPH HENRY, Esq.,
Secretary Smithsonian Institution, Washington.

CHRISTIANA, NORWAY, *November* 4, 1863.

SIR: Having been appointed director of the Ethnological Museum at the University of Christiana, I have perused a letter of the 6th May, 1862, from the secretary of the Smithsonian Institution to the secretary of this university.

As this letter alludes to the endeavors of your excellent Institution for the collection of ethnological objects from North America, and the utility of establishing a system of exchange for European curiosities, I have made use of the opportunity to offer you what we have in this line.

The aboriginal population of this country are the Laps or Laplanders, living at present on the mountains and sea-coasts farthest north of Norway, Sweden, and Russia. Their language proves them undoubtedly to be of the Mongolian stock in Asia, and, as such, related to the red man of America. The Laps are a remarkable instance of this race, as they are converted to Christianity and have adopted the habits and industry of civilization, modified by the severity of the arctic climate in their country and their peculiar mode of subsistence as nomads with flocks of reindeer. We have procured a set of models made by the individuals of the people themselves, and illustrative of their present mode of existence.

In offering this small collection for your acceptance, we hope that it may serve a scientific purpose in comparing the red man with his yellow brother in the old continent. If it should be in your power to afford us some correspond ing objects from your field of research, that is so immensely more extensive, a

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very great desideratum in our collection would be supplied that would engage our most earnest attention.

The articles in question are—

I. Three casts, in plaster, taken from living individuals, viz: 1, an unmixed Lap, 39 years old; 2, a man whose father was a Fin from Russian Finland, and whose mother was a Lap, 42 years old; 3, a man whose grandmother was a Swede, (of the Teutonic stock,) otherwise Lap, 43 years.

II. Four photographic portraits: 1, mixture of Lap and Fin, 28 years; 2, 74 years; 3, 28 years; 4, 38 years—pure Laps.

III. A reindeer, harnessed with its sledge. The sledge is canoe-shaped, so as to be able to move upon the deepest and softest snow without going down into it.

IV. A pair of snow-shoes, being very long pieces of thin wood, with which the Lap can walk upon soft snow. They have straps or stirrups to put the feet into. The man moves on with the staff.

V. A pair of pack-saddles, with which they move their luggage in summer on the back of the reindeers; included is a model of a wooden tub and a cask; two flat pieces of wood to lay across the back of the reindeer are attached.

VI. A trunk, in which is included the wooden bowl for preserving the reindeer milk, and the press for making cheese out of it.

VII. A spade for removing the snow.

VIII. Two large wooden bowls.

IX. A tent; in the middle the fireplace and two pots hanging over it; behind is a scaffolding of wood for their stores, raised upon poles, so that it may not be attacked by dogs.

Confiding in your interest for the advancement of science, I remain, very respectfully, your obedient servant,

LOUIS KR DAA.

JOSEPH HENRY, Esq.,
Secretary Smithsonian Institution, Washington.

[These articles are now in the museum.]

KAISERLICHE-KÖNIGLICHE GEOLOGISCHE REICHS-ANSTALT,
Vienna, December 11, 1863.

SIR: I have the honor to transmit to you for the Smithsonian Institution a series of tertiary fossils from the Vienna basin, viz:

From the Congeria beds	6 species.
From the Cerithium beds	10 species.
From the Marine beds	270 species.
Total	286 species.

In the box prepared to be sent you will find, 1, the present letter; 2, a systematic catalogue, with tabular reference to the localities; 3, a catalogue in which the localities are kept separate; 4, a guide of geographical reference for the localities. The number of specimens or lots in catalogue 3 is 622. Beside these there are a number imperfectly determined or not belonging to Austrian localities. The rest will give a pretty fair idea of the leading or type mollusca of our Vienna basin. The series here offered has been composed or selected under the auspices of Dr. Hörnes, director of the Imperial Museum of Mineralogy, and he placed it at the disposal of our Imperial Geological Institute, so that I beg you will consider it as a joint offer from both establishments.

I have the honor to be, dear sir, ever most truly yours,

W. HAIDINGER.

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BRITISH MUSEUM, *December* 30, 1863.

DEAR SIR: I have to acknowledge the receipt of your letter of this day's date, and to acquaint you that the trustees have acceded to the request made by Professor Henry, on behalf of the Smithsonian Institution, and that I have instructed Dr. Gray to give you every facility with a view to such electrotype impressions being made for that Institution as are required from our wood engravings illustrative of the conchology of the North American continent. I shall be happy to see you, and to give you any assistance in my power whenever it may be convenient for you to call at the museum, as you propose.

Believe me, dear sir, yours truly,

A. PANIZZI.

Dr. P. P. CARPENTER.

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31 PFEIDEMARKET, HAMBURG,
February 4, 1864.

DEAR SIR: I duly received your very kind letter of the 6th of January, informing me that the director of the Smithsonian Institution would have the kindness to send me five of the American perennibranchiates for investigation. A few days afterwards the box was delivered into my hands, containing—

1. Menopoma Alleghaniense.
2. Menobranchus lateralis.
3. Siren lacertina.
4. Amphiuma tridactylum.
5. Siredon pisciformis.

All these amphibia being of the greatest importance for my studies, I cannot but express to you my most sincere thanks for this most valuable assistance. You will allow me to pay to your renowned Institution, in the mean time, my thanks for the reports and other valuable works, particularly on the Zoölogy and Anatomy of Amphibia, published at Washington, and directed to me some years ago.

I should feel most happy if you would give me a direction how I might pay my thanks in a more material manner. You will, therefore, oblige me very much by informing me of the desiderata in your collections. Perhaps there might be some European fishes or amphibia which I might be able to procure for you. Of sea snakes, which family of snakes I have described some years ago, there are also some few species in my own possession. In minerals I am pretty rich, having the best private collection of this branch that exists in our place.

It is only on the supposition that I might be able to furnish to the Smithsonian Institution some equivalent that I take the great, and, perhaps, immodest liberty to mention, that one specimen more of the genera amphiuma, siren, and menopoma, would be of the greatest importance for my studies. It would be very difficult to decide all the anatomical questions concerning the named amphibia after the investigation of only one specimen. Having the intention to describe in a comparative manner the bones, muscles, and nerves of the famous Salamandra Japonica, with relation to the other genera of Ichthyodea, I feel myself in a high degree advanced by the specimens which I owe to your kindness, and would be induced to hope that my little work might not remain quite imperfect, if there would be any chance to acquire still one specimen more of the above-mentioned three genera.

Finally, you will allow me to say that I am not now in any connexion with the Hamburg Museum, as the address of your letter said, but that, though being on very friendly relations with the directors of our collections, I have given up my place among them.

With the highest regards, I am yours, very respectfully,

DR. J. G. FISCHER.

[The specimen requested was sent to Dr. Fischer.]

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VIENNA, *February* 9, 1864.

MY DEAR SIR: Permit me to enclose here an invitation to join in a subscription for a gold honorary medal to be presented to our most worthy Professor Ch. Fr. Ph. von Martius, of Munich, on his fiftieth anniversary of medical doctorship on the 30th of March, 1864.

Our most honored friends on the other side of the Atlantic should not fail in the list; only I am sorry that by various impediments I was prevented from writing at an earlier period. It is now so late that only by very good luck it will be possible that an answer may arrive previously to the 15th of March, to be entered in the first list which must be printed, embellished, and then bound up, and sent to Munich from Vienna before the 30th of March. Whatever is brought to notice later than the 30th will be appended, and what comes to hand after the 30th up to the end of June will be given in the first complementary report to be published on the 1st of July. Nothing will be lost, as even what comes after that period will be published afterwards.

Every subscriber, of course, will have a bronze copy of the medal, and the votary tablet sent to him. Subscriptions should be three florins Austrian silver money, or more, which is about one and a half dollar American silver.

By this time you may already have received our last box with tertiary fossil types of several localities of the Vienna basin, being a joint parcel from the Imperial Mineralogical Cabinet and our own Geological Institution.

I am happy to hear you have now the Ainsa Tucson meteoric iron. I shall send some of these days a paper of mine on the Carleton Tucson, which appeared in the Vienna Academy Proceedings. I enclose impression from the surface, cut, polished, and etched, and galvanographed positively and negatively. We shall be happy, as soon as you may fix on cutting some slices off the block, to receive a bit from you for our Imperial Mineralogical Museum of the Ainsa Tucson too.

With all the most cordial wishes, ever most truly yours,

W. HAIDINGER.

Professor JOSEPH HENRY,
Secretary to the Smithsonian Institution, Washington.

OFFICE HUDSON'S BAY COMPANY,
Montreal, February 26, 1864.

MY DEAR SIR: Absence from home and subsequent indisposition have prevented my acknowledging receipt of your letter of 19th ultimo at an earlier date.

The settlement you have made of Mr. Kennicott's account is quite satisfactory. There was a small deficiency in consequence of a change in the rate of exchange when your draft reached me; but that matter can be arranged when we receive Mr. Mactavish's final statement of Mr. Kirkby's account.

The kind expressions of thanks contained in your letter are very gratifying. We have always felt pleasure in promoting scientific research; but, in Mr. Kennicott's case, this was enhanced by his amiable character and prudence. It is no easy part to play, going as a stranger into a territory inhabited by men bound to a foreign government, and with exclusive views on many points. But Mr. Kennicott knew how to meet the circumstances; and from his arrival among us until his departure was always popular, and I believe inspired a sincere friendship and esteem among those with whom he most associated. If in Washington, pray offer him my kind regards.

Hoping some day to have the honor and pleasure of forming your personal acquaintance, believe me, sir, very truly yours,

EDW. M. HOPKINS.

JOSEPH HENRY, Esq.,
Smithsonian Institution, Washington, D. C.

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JOURNAL OF PROCEEDINGS

OF

THE BOARD OF REGENTS.

WASHINGTON, *January* 9, 1865.

A special meeting of the Board of Regents was held this day at 7½ o'clock p. m. in the hall of the Institution. Present: Hon. H. Hamlin, Hon. S. P. Chase, Hon. L. Trumbull, Hon. G. Davis, Hon. S. S. Cox, Hon. J. W. Patterson, Professor L. Agassiz, and the Secretary, Professor Henry.

Mr. Hamlin was called to the chair.

The Secretary stated that this meeting had been called in accordance with a provision of the law of Congress authorizing a meeting at any time, at the request of three members of the Board. That the objects of this meeting were—

First. To announce officially the death of Chief Justice Taney and General Totten, both members of the Board from the beginning of the Institution, and who had ever evinced a lively interest in its prosperity, and had faithfully discharged their duties as guardians of the trust.

Second. To elect a Chancellor or President of the Board in place of Chief Justice Taney.

Third. To consider the disposition to be made of the remainder of the legacy of Smithson, which was now deposited with Messrs. Peabody & Co., of London, subject to the order of the Institution; and,

Fourth. To consider the report of the committee appointed at the last session of the Board, relative to the suggestions of Professor Agassiz as to the separate maintenance of the museum, &c.

On motion of Mr. Cox, it was resolved that the proper expression of sympathy be tendered to the families of the Regents whose deaths have been announced, and that provision be made for the preparation of an account of their lives and labors for the annual report to Congress.

On motion of Mr. Cox, Chief Justice Salmon P. Chase was unanimously elected Chancellor of the Institution.

On motion of Mr. Chase, the Secretary was instructed to draw the money now in England, and to deposit it with the Treasurer of the United States.

Professor Agassiz, as chairman of the special committee, appointed at the meeting held March 15, 1864, to report suggestions for extending the active operations of the Institution, and for the separate maintenance of the collections, at the expense of the government, submitted a report.*

* This report was lost in the fire, and the absence of Professor Agassiz from the country has rendered it impossible to obtain another copy in time for insertion in this journal

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The opinion was expressed by several members of the Board that the views of Professor Agassiz were highly important, and believed to be such as were entertained generally by the scientific men of the country, but in consideration of the financial condition of the government, the present time was not favorable for action in regard to them.

On motion of Mr. Trumbull, the consideration of the subject was postponed to the annual session to be held in January, 1866.

The Secretary stated that the question had arisen at a previous meeting of the Board as to whether the interest on the Smithsonian fund, permanently in the treasury of the United States, ought not to be paid in coin, in common with the interest on other trust funds in charge of the government; that he had addressed a letter to the Secretary of the Treasury on this subject, but on account of the large demands on the government for the prosecution of the war, he had not pressed a decision of the question.

On motion of Mr. Chase, it was

Resolved, That the Secretary be instructed to renew the application to the Treasury Department, in behalf of the Board, for the payment of the interest in coin.

The meeting then adjourned.

WASHINGTON, *January* 19, 1865.

In accordance with a resolution of the Board of Regents of the Smithsonian Institution, fixing the time of beginning of their annual session on the third Wednesday of January in each year, a meeting was called for this day.

No quorum being present, and the Secretary having stated that the book-keeper had not yet been able to make up the annual accounts, the Board adjourned, to meet at the call of the Secretary.

WASHINGTON, *January* 28, 1865.

A meeting of the Board of Regents was held at 3 o'clock p. m. in the east wing of the Smithsonian building. Present: Hon. S. P. Chase, Hon. H. Hamlin, Hon. L. Trumbull, Hon. J. W. Patterson, Hon. R. Wallach, Mr. Seaton, treasurer, and Professor Henry, Secretary.

The Chancellor, Chief Justice Chase, took the chair.

The Secretary stated that the principal object of this meeting was to officially inform the Regents that, on the afternoon of Tuesday, January 24, a fire broke out in the roof of the main building of the Smithsonian Institution, which destroyed the principal part of the contents of the rooms in the upper story of the building and the adjoining towers. The loss, however, did not include the large library, the museum, with the government collections and those of the Institution, the duplicate specimens intended for distribution, and the meteorological records. The accident would not, therefore, materially affect the essential operations of the Institution, which would be continued as usual.

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The Secretary stated that, immediately after the occurrence of the accident, he had applied to the Secretary of War, Mr. Stanton, for aid in constructing a temporary roof to protect the building and its contents from the weather. The Secretary of War expressed his willingness to grant this, provided the President gave his sanction, and the expense should be refunded to the department. The latter was promised on the part of the Institution by the Secretary, after consultation with the Chancellor. The President readily gave his consent to the proposition, and General Rucker, of the Quartermaster's Department, furnished the materials, and detailed a large force of carpenters and laborers, under the direction of Mr. E. Clark, to erect a temporary roof, which would be sufficient to protect the building from storms, and would not interfere with the construction of a permanent covering.

At the suggestion of the Chancellor, it was

Resolved, That the measures which had been taken by the Secretary be approved.

Mr. Patterson informed the Board that the House of Representatives had adopted, on the motion of Hon. Mr. Rice, a resolution directing the Committee on Public Buildings and Grounds to inquire into the origin of the fire, the approximate loss to the government and private persons, the means necessary to preserve the remaining portions, &c.

The Chancellor remarked that it would be proper that a joint committee should be appointed, to be composed of members of the Senate, of the House of Representatives, and of this Board, to take the whole subject into consideration.

In anticipation of this, however, it was thought advisable that a special committee should be appointed to report directly to the Board; and, on motion of Mr. Wallach, it was

Resolved, That a committee be appointed to inquire into the origin of the fire, to ascertain the extent and character of the loss sustained, and to make suggestions as to what measures should be adopted for the repair and improvement of the building.

The Chancellor appointed the mover of the resolution Mr. Wallach, and the Secretary, as the committee.

The Board having examined the building, adjourned, to meet on Thursday evening at 7½ o'clock p. m.

WASHINGTON, *February* 2, 1865.

A meeting of the Board of Regents of the Smithsonian Institution was held at 8 o'clock p. m. at the residence of one of the Regents, Hon. R. Wallach, Mayor of Washington. Present: Hon. H. Hamlin, Hon. G. Davis, Hon. J. W. Patterson, Hon. S. S. Cox, Hon. R. Wallach, and the Secretary, Professor Henry, and, by invitation, Hon. J. H. Rice, chairman of the Committee on Public Buildings of the House of Representatives.

Mr. Hamlin was called to the chair.

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The minutes of the meetings held on the 9th, 19th, and 28th of January were read and approved.

Mr. Wallach presented the report of the Executive Committee for the year 1864, which was read and adopted.

The Secretary stated that, in accordance with the instructions of the Board, he had renewed the inquiry to the Secretary of the Treasury whether the interest of the Smithsonian fund ought not to be paid in coin or its equivalent, but had not yet received a reply, it having been referred to the Solicitor of the Treasury for a legal opinion.

On motion of Mr. Davis, it was

Resolved, That if the Secretary of the Institution should ascertain that the legal opinion of the Solicitor would be adverse to the application, that he should request the Secretary of the Treasury to submit the question to Congress for its action.

Professor Henry presented the question as to the disposition of the residuary legacy of Smithson which had been received from England, and was now on deposit with the Treasurer of the United States.

On motion of Mr. Patterson, it was

Resolved, That the Secretary be instructed to invest the money now on deposit with the Treasurer of the United States, derived from the residuary legacy of James Smithson, in United States bonds bearing $7\frac{3}{10}$ per cent. interest.

Mr. Wallach presented the following report from the special committee appointed at the last meeting to inquire into the origin of the fire, &c., which was read and adopted:

REPORT OF THE SPECIAL COMMITTEE OF THE BOARD OF REGENTS OF THE SMITHSONIAN INSTITUTION RELATIVE TO THE FIRE.

The special committee appointed by the Board at its meeting on January 28, 1865, to inquire into the origin of the fire at the Smithsonian Institution, to ascertain the extent and character of the loss sustained, and to make suggestions as to what measures should be adopted for the repair and improvement of the building, respectfully report that they have performed the duty assigned them, so far as the time and their means of information would permit.

I.—THE ORIGIN OF THE FIRE.

The testimony has been taken of all persons connected with the establishment that had any knowledge of the occurrence, and a written account of the whole is herewith submitted; also a report from Colonel B. S. Alexander, United States army, who superintended the fire-proofing of the main building, of his examination of the flues connected with the accident.

It is evident, from the concurrent testimony thus obtained, that the fire commenced in the southwest part of the roof of the main building in the woodwork immediately under the slate covering, and that it was kindled by the heated air or sparks from a stove which had been temporarily placed in the room immediately below. The pipe of this stove had been inserted, by mistake, into a brick furring-space resembling a flue, which opened under the rafters instead of into the chimney flue, within a few inches of the latter. By whom the hole into which the pipe was inserted was originally made is not known, but it is remembered that a stove-pipe was put into it as far back as 1854, at the time of the exhibition held by the Mechanics' Institute in the building. No

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fire, however, had been in this room for ten years previous to Monday, 15th January, when the mechanist and carpenter of the Institution were engaged, with several other of the employés, in rearranging the pictures of the gallery, the weather at the time being unusually cold. These persons, for temporary convenience, set up the stove above mentioned, intending to remove it as soon as their task was finished. A coal fire, kindled with wood, had been burning in this stove for eight days previous to the conflagration, yet it appears from the testimony that no evidence of combustion was observed by a person who passed through the loft six hours before the breaking out of the flames. It is probable, however, that the wood had been undergoing a process of charring for several days.

On account of the very expensive style of architecture selected for the building, and the limited means at the command of the Board, the plan had been at first adopted of finishing the interior of the whole edifice with wood and plaster. A large portion, however, of the interior woodwork of the main building, after the roof and exterior had been finished, gave way and fell; whereupon the Regents ordered the removal of the woodwork and its place to be supplied with incombustible materials. Thus the main building was rendered fire-proof, with the exception of the supports of the roof, which being covered with slate was assumed to be safe. The only danger of the occurrence of fire was supposed to exist in the two wings and the towers, and to guard against this contingency especial precautions were constantly observed, viz: 1. No smoking was allowed in any part of the building at any time. 2. No lights were allowed to be carried from one part of the building to another except in lanterns. 3. Three coils of large hose were deposited, ready for use, one in the upper story and the other two on the first floor of the building; and there were water-pipes in the basement with faucets. 4. Barrels and buckets, kept constantly filled with water, were placed at different points of the building. 5. The rule was observed of cleaning the flues every autumn before the commencement of fires. 6. A watchman was employed each night, who made every hour the rounds of all the rooms in the building, giving special attention to those in which fire had been kindled during the day, including the apartments occupied by the family of the Secretary.

These precautions, however, as it has proved, were insufficient—the fire having occurred at a point where no danger was apprehended, and to which access could with difficulty be obtained.

II.—THE CHARACTER AND EXTENT OF THE LOSS SUSTAINED.

The loss to the Institution was as follows:

1. The contents of the Secretary's office, consisting of the official, scientific, and miscellaneous correspondence, embracing 35,000 pages of copied letters which had been sent, at least 30,000 of which were the composition of the Secretary, and 50,000 pages of letters received by the Institution. Here, moreover, were lost the receipts for publications and specimens; reports on various subjects which have been referred to the Institution; the records of experiments instituted by the Secretary for the government; four manuscripts of original investigations, which had been adopted by the Institution for publication; the manuscript material of the report of the Secretary for 1864; a large number of papers and scientific notes of the Secretary; a series of diaries and memorandum books, and a duplicate set of account books, prepared during the last twelve years, with great labor, by Mr. Rhees, the chief clerk; also, about one hundred volumes of valuable works kept at hand for constant reference.

2. In the apparatus room, the large collection of scientific instruments, including the donation of the late Dr. Hare.

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3. A part of the contents of the Regents' room, including the personal effects of Smithson, with the exception of his portrait and library.

4. The contents of the rooms in the towers, including the meteorological instruments, the workshop, containing a lathe and a large number of valuable tools, nearly all the stock on hand of the duplicate copies of the annual reports, and many other public documents and books intended for distribution to libraries, as well as a quantity of stationery, hardware, &c.

5. The wood-cuts of the illustrations contained in the Smithsonian publications.

The loss to other parties was as follows:

1st. The contents of what was called the Picture Gallery, viz: *a*. About two hundred portraits, nearly all of life size, painted and principally owned by Mr. J. M. Stanley, formerly of this city, and now of Detroit, Michigan, and which were on deposit in the institution. *b*. A number of half-size Indian portraits, painted by Mr. King for the government. *c*. A copy, in Carrera marble, of the antique statue known as the "Dying Gladiator," by John Gott, and owned by Mr. J. C. McGuire, of this city.

2. A number of surveying instruments belonging to the government.

3. The clothing, books, and private effects of several of the persons connected with the Institution, and of those engaged in scientific studies.

4. The library removed from Beaufort, South Carolina, by the army, and also that of Bishop Johns, from Fairfax Theological Seminary, given in charge to the Institution by the Secretary of War for safe-keeping, which libraries were stored in an upper room in the south tower.

Independent of injury to the building, the loss to the Institution, as far as it may be estimated and can be restored by money, may be stated at about $20,000, and to individuals $26,000, viz: To Mr. J. M. Stanley, $20,000; Mr. J. C. McGuire, $1,000; Professor Joseph Henry, $1,500; Mr. W. J. Rhees, $1,200; Mr. W. DeBeust, $1,300; and all others, $1,000.

Although the loss which the Institution and individuals have sustained is much to be regretted, yet it is a source of consolation that by far the greater part of the valuable contents of the building have escaped without injury. The valuable library of the Institution, the most extensive, in regard to the transactions of learned societies and scientific books, in this country; the museum, including the collection of the exploring expedition and those of the Institution; the large stock of many thousand duplicate specimens for distribution to all parts of the world; the records of the museum; a large portion of the correspondence relative to natural history; nearly all the records of meteorological observations which have been accumulated during the last fifteen years; the sets of Smithsonian publications (except the annual reports) which have been reserved to supply new institutions, and the stereotype plates of all the works which have been published during the last four or five years, have been saved. All the original vouchers of the payments made by the Institution, the ledger in which they were posted, and the daybook from 1858, were also preserved, having been deposited in a safe in the Regents' room. The contents of the connecting range between the library and the museum are uninjured; this includes a series of plaster casts and portraits of distinguished men, among the latter a life-size portrait of Guizot, by Healy; an original full-length figure of Washington, by the elder Peale; and also a valuable series of rare engravings illustrative of the history of the art, purchased from the Hon. George P. Marsh.

All the important acts of the Regents from the beginning, and an account of the operations of the Institution, having been published from year to year in the several reports to Congress, a continued record of the history of the establishment from the beginning is, therefore, still in existence. As these reports have been widely distributed, they are generally accessible to the public.

The burning of the roof of the building can scarcely in itself be considered

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a calamity, since it probably would have occurred at some future time when a much larger accumulation of valuable articles might have been destroyed, and since the arrangement of the building can now be improved, and the repairs made with fire-proof materials. The fire-proofing, as far as it was carried, was well done, and it is to this circumstance that the preservation of the most valuable objects of the establishment is due.

III.—SUGGESTIONS AS TO WHAT SHOULD BE DONE.

There can be no hesitation in adopting the conclusion that steps should be immediately taken not only to repair the injury, but to improve the condition of the building.

1. The main edifice should be provided with a metallic roof.
2. For the wooden conical terminations of the towers should be substituted metallic coverings.
3. All valuable articles belonging to the Institution or deposited in it, including the library, should be placed in the main building, which should be cut off from the wings by iron doors.
4. Provision should be made for a thorough heating of the whole building by steam or hot water.
5. Suggestions should be requested from competent architects and engineers as to the work to be done, and those which are adopted should be embodied in working plans and drawings.
6. A building committee of the Board should be appointed to have charge of the work.

No very exact estimate can as yet be made as to the cost of the repairs, &c., for it has not been possible, without erecting a scaffolding, to determine whether it will be necessary to take down the high northern tower. Colonel Alexander, of the engineer corps, however, has informed the committee that he thinks $100,000 will be required to make the necessary repairs and improvements.

The committee cannot conclude without adding that, in their opinion, the occurrence of the fire ought not to be allowed to interfere with the active operations of the Institution, on which essentially depends the reputation it has established throughout the world, and its efficiency as an instrument for "the increase and diffusion of knowledge among men." To the support and extension of these operations, therefore, the annual interest from the original fund should, as far as possible, continue as heretofore to be conscientiously applied.

Respectfully submitted:

RICHARD WALLACH,
JOSEPH HENRY,
Special Committee.

WASHINGTON, *February*, 1865.

The question was then discussed as to the measures to be taken for procuring the means for the repair and improvement of the building; and the Regents present connected with Congress, as well as Hon. Mr. Rice, expressed the opinion that it was probable an appropriation would be made by Congress for the purpose, without opposition.

On motion of Mr. Cox, it was

Resolved, That the Secretary prepare a statement of the amount necessary to reconstruct the building; the legislation necessary to place the residuary legacy of Smithson, with the original amount, permanently in the treasury of the United States; and the action requisite to secure the payment of the interest on the fund in coin, to be furnished to the joint committee of Congress which has been appointed with reference to the Smithsonian Institution.

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On motion of Mr. Wallach, the following resolutions were adopted:

Resolved, That the thanks of the Board of Regents are hereby tendered to all who assisted in any way in endeavoring to save the property of the Smithsonian Institution, or to extinguish the fire which lately destroyed a part of its building.

Resolved, That the thanks of the Board of Regents are hereby tendered to Hon. E. M. Stanton, Secretary of War, General W. S. Hancock, General C. C. Augur, General A. B. Dyer, General Rucker, Colonel B. S. Alexander, Colonel Giles, and others connected with the military department of government, for services rendered in saving the property, or in facilities granted for its protection.

Resolved, That the thanks of the Board are hereby tendered to the military and civil fire departments, and to Mr. E. S. Smith, superintendent of Harnden Express Company, A. C. Richards, Chief of Police, Messrs. J. R. Elvans, J. Farrel, M. Tiffany, G. Gibbs, and many others who rendered valuable services at the time of the fire.

The Board then adjourned, to meet at the call of the Secretary.

WEDNESDAY, *March* 1, 1865.

A meeting of the Board of Regents of the Smithsonian Institution was held this day in the room of the Senate Committee on Public Buildings and Grounds, at the United States Capitol, at 10 o'clock a. m. Present: Hon. L. Trumbull, Hon. G. Davis, Hon. S. S. Cox, Hon. J. W. Patterson, Hon. R. Wallach, and the Secretary, Professor Henry.

The minutes of the last meeting were read and approved.

In the absence of the Chancellor, Mr. Trumbull was called to the chair.

The Secretary announced the election of General Richard Delafield, United States army, by joint resolution of the United States Senate and House of Representatives, as a Regent for the term of six years, to fill the vacancy occasioned by the death of General Totten.

The Secretary stated that intelligence had recently been received of the sudden death of the Hon. WILLIAM L. DAYTON, one of the Regents, while representing our government in France; that, although Mr. Dayton had not been able to be present at the meetings of the Board, he had rendered good services to the Institution by attention to its interests abroad.

On motion of Mr. Cox, it was

Resolved, That the Hon. J. W. Patterson be requested to prepare a eulogy on Mr. Dayton; that Hon. Henry Winter Davis be requested to prepare a eulogy on Chief Justice Taney; and Professor Henry one on General Totten, to be presented at the next meeting of the Board.

The Secretary mentioned the death of Mr. John Varden, for many years the curator of the government museum while it was in the Patent Office, and who, since its removal to the Institution, had assisted in the care of the specimens. He was a very worthy citizen, and faithfully discharged his duties in connexion with this establishment.

The Secretary also stated that one of the employés, John Connor, who had been connected with the Institution for upwards of fifteen years, died suddenly

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last summer, leaving a family of daughters in a destitute condition; that he had given the widow permission to sell articles of refreshment, exclusive of intoxicating liquors, to the visitors of the museum, and that he thought, in consideration of the long and faithful service of the deceased, the expenses of his funeral should be paid from the Smithsonian fund.

On motion of Mr. Wallach, it was

Resolved, That the Secretary be authorized to pay the funeral expenses of John Connor.

On motion of Mr. Patterson, the vacancy in the Executive Committee was filled by the election of General Delafield.

On motion of Mr. Trumbull, it was

Resolved, That the annual salary of the Secretary of the Institution be increased one thousand dollars, that of the Assistant Secretary five hundred dollars, and of the Chief Clerk three hundred and fifty dollars, and that the said increase take effect from the 1st of January, 1865.

The Secretary stated what measures had been taken in regard to the preservation of the Smithsonian building, and that Mr. A. Cluss, architect, had been employed to prepare plans and estimates.

On motion of Mr. Cox, it was

Resolved, That the whole subject of the repairs and reconstruction of the building, and the disposal of the stocks held by the Institution, be intrusted to the Chancellor, Secretary, and the Executive Committee.

The Board then adjourned *sine die*.

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JOURNAL OF PROCEEDINGS

OF

THE BOARD OF REGENTS.

WASHINGTON, *January* 17, 1866.

In accordance with a resolution of the Board of Regents of the Smithsonian Institution, fixing the time of beginning of their annual session on the third Wednesday of January in each year, a meeting was called for this day.

No quorum being present, the Board adjourned to meet on Saturday, February 3, 1866.

WASHINGTON, *February* 3, 1866.

A meeting of the Board of Regents was held at 12 m. in the laboratory of the Smithsonian Institution.

Present: Hon. L. F. S. Foster, Vice-President of the United States, Hon. Garret Davis, Hon. Lyman Trumbull, Hon. J. W. Patterson, Hon. J. A. Garfield, Hon. J. F. Farnsworth, General Richard Delafield, Hon. Richard Wallach, and Professor Henry, Secretary.

Mr. Foster was called to the chair.

The Secretary stated that since the last annual session the following gentlemen had been appointed as Regents by the Speaker of the House of Representatives:

Hon. J. W. Patterson, of New Hampshire; Hon. J. A. Garfield, of Ohio; Hon. J. F. Farnsworth of Illinois.

Mr. Patterson was reappointed a Regent, and Messrs. Garfield and Farnsworth were appointed to succeed Hon. S. S. Cox and Hon. H. Winter Davis, whose terms as members from the House of Representatives had expired.

The Secretary gave a general account of the objects and operations of the Institution, the nature of the will of Smithson, &c.

General Delafield, from the Executive Committee, presented a report of the financial condition of the Institution, and gave an account of what had been done towards the reconstruction of the building.

The Secretary presented a notice from Roswell C. Brainard, esq., surrogate of the county of Kings, New York, requiring the Smithsonian Institution to appear at his office, in Brooklyn, New York, on the 19th of March next, at 10 o'clock a. m., to attend the final settlement of the account of Francis Vinton, as executor of and trustee under the last will and testament of Thomas Wynns, deceased, of whose estate the Institution is a residuary legatee.

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On motion of Mr. Davis, it was

Resolved, That the Secretary be authorized to have the Institution represented at the surrogate's office, Brooklyn, New York, on the 19th of March next.

The Secretary stated that during the past year the interest on the Smithsonian fund in the treasury of the United States had been paid in coin; but that Chief Justice Chase, Chancellor of the Institution, had recommended that application be made to the Secretary of the Treasury for the payment of all the interest in coin, which for the previous three years had been received in currency, since he had while Secretary of the Treasury authorized a similar course in regard to other applications of the same character.

On motion of Mr. Garfield, it was

Resolved, That the Secretary of the Institution be directed to apply to the Treasury Department for the payment of the difference between the interest actually received in currency during the years 1862, 1863, and 1864, and the amount in coin to which the Institution was justly entitled.

Mr. Patterson addressed the Board in relation to the great value of the library of the Institution, and recommended that some action be taken to secure it from danger of destruction, and advised the placing of it, under proper restrictions, in the library of Congress.

After remarks by Messrs. Delafield, Garfield, Davis, and Trumbull,

On motion of Mr. Patterson, it was

Resolved, That a committee be appointed, to consist of one Regent from the Senate, one from the House of Representatives, one resident member, and the Secretary of the Institution, to confer with the Committee on the Library of Congress in relation to an arrangement for the removal of the library of the Smithsonian Institution to the Capitol.

The Chair appointed Mr. Patterson, chairman, and Messrs. Trumbull, Delafield, and Professor Henry as the committee.

The Board then adjourned to meet on Saturday, February 17.

WASHINGTON, *February* 23, 1866.

A meeting of the Board of Regents of the Smithsonian Institution was held this day at 12 m. in the room of the Senate Committee on the Judiciary, United States Capitol.

Present: Hon. L. F. S. Foster, Vice-President United States, Hons. W. P. Fessenden, L. Trumbull, and G. Davis, of the United States Senate; Hons. J. W. Patterson, J. A. Garfield, and J. F. Farnsworth, of the House of Representatives; General R. Delafield, Hon. R. Wallach, and Professor Henry, Secretary.

Mr. Foster took the chair. The minutes of the last meeting were read and approved.

The Secretary stated that, in accordance with the instructions of the Board, he had addressed the following communication to the Secretary of the Treasury relative to the payment of the interest on the Smithsonian fund in coin; but as yet had received no answer:

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SMITHSONIAN INSTITUTION,
Washington, February 7, 1866.

SIR: I am directed by a resolution of the Board of Regents of the Smithsonian Institution, adopted at a meeting on the 3d of February, to make application for the repayment in coin of the six instalments of interest on the Smithsonian fund for the years 1862, 1863, and 1864.

These payments were made in currency, but it has since been decided by the legal adviser of the Treasury Department that the Institution was entitled, by the usages of the government in paying the interest on the permanent debts of the United States, to receive its interest in coin.

The Board of Regents have been informed by Chief Justice Chase that, when Secretary of the Treasury, he had made several repayments of this kind, and therefore they consider that the Institution is not only in justice entitled to this claim, but that also a precedent has been established by which it can be readily allowed.

I have the honor to be, very respectfully, your obedient servant,
JOSEPH HENRY, *Secretary.*

Hon. H. MCCULLOCH,
Secretary of the Treasury.

The Secretary stated that Joseph H. Patton, esq., attorney, 112 Broadway, New York, had kindly consented to attend at the settlement of the account of the executor of Mr. Wynns, that gentleman having from the beginning been fully acquainted with all the facts of the bequest.

Mr. Patterson, from the special committee appointed at the last meeting, reported that a conference had been held with the Library Committee of Congress, and that certain propositions had been discussed relative to the transfer of the library of the Institution, and he recommended the adoption of the following as the conditions on the part of the Institution:

1. That the Smithsonian library be deposited in the library of Congress, subject to reclamation when the Regents may so desire.

2. The public to have access to the library for purposes of consultation every ordinary week day.

3. The Institution to have the use of its own books as at present, and through its Secretary to have the use of the library of Congress, under the same regulations as senators and representatives.

4. That the books, maps, charts, &c., of the Smithsonian library be properly cared for as are those of the library of Congress.

After considerable discussion, in which Messrs. Fessenden, Trumbull, Delafield, Patterson, and Farnsworth took part, on motion of Mr. Trumbull the following was adopted as a substitute for the first proposition reported by the committee.

1. That the library of the Smithsonian Institution be placed on deposit with the library of Congress, not to be withdrawn except on reimbursement by said Institution to the United States of the expenses incurred in taking care of said library, or on such terms and conditions as shall be mutually agreed upon between the United States and the Regents of the Institution.

On motion of Mr. Patterson, it was

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Resolved, That a committee be appointed to make the necessary arrangements with the Library Committee of Congress for the proposed transfer.

Mr. Patterson, Mr. Trumbull, Mr. Garfield, and Professor Henry were appointed the committee.

Professor Henry presented his annual report of the operations of the Institution during 1865, which was read in part.

On motion, the Board adjourned to meet at the call of the Secretary.

WASHINGTON, *March* 24, 1866.

A meeting of the Board of Regents was held this day in the laboratory of the Institution, at 7½ o'clock p. m.

Present: Chief Justice Chase, Chancellor; Hon. G. Davis, Hon. J. A. Garfield, Hon. R. Wallach, General Richard Delafield, and the Secretary, Professor Henry.

The minutes of the last meeting were read and approved.

The Secretary stated that the Secretary of the Treasury had granted the request made by the Board relative to the payment of the interest in coin on the Smithsonian fund, in the following manner: The amount which had been paid to the Institution for six instalments of interest, from January, 1862, to July, 1864, in currency, was repaid into the treasury of the United States by Riggs & Co., bankers of the Institution, who received in exchange for it the same amount in coin. This coin was sold immediately in New York, as follows:

March 14, 1866,	$50,000	at 129¾	$64,875 00
	5,000	at 129½	6,475 00
	37,730	at 129⅜	48,813 73
	92,730		120,163 73
		Less brokerage and tax	351 98
			119,811 75

The profit, therefore, to the Institution by the change of the currency to coin, and the sale of the latter, is $27,081 75.

The report of the Executive Committee was presented by the chairman, Mr. Wallach, and after explanations in detail by Generald Delafield, on motion of Mr. Davis, was adopted.

General Delafield, chairman of the Building Committee, presented plans and estimates for the reconstruction of the building.

The subject of the disposition of the money in possession of the Secretary of the Treasury, resulting from the residuary legacy of Smithson, was next considered. The Secretary suggested that so much of this sum as was received from England, independent of the premium on the coin, viz: $26,210 63, should be added to the amount originally deposited in the treasury of the United States by Mr. Rush, making $541,379 63 as the total bequest of Smithson, and that the premium and the interest since accrued be applied to the current uses of the Institution, and to assist in defraying the cost of the restoration of the

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building. By this arrangement the interesting fact could be stated that, after all the Institution has done in the way of increasing and diffusing knowledge, the entire sum derived from the bequest of Smithson is still undiminished in the treasury of the United States.

The Chancellor recommended that the sum thus added to the money now in the treasury of the United States should be sufficient to make up the amount to $550,000.

On motion of Mr. Wallach, it was

Resolved, That the Secretary be directed to apply to Congress for an act by which the residuary legacy of James Smithson, now in the possession of the Secretary of the Treasury, amounting to $26,210 63, be added to the sum originally received; and that also from the income of the above-mentioned residuary legacy the further sum of $8,620 37 be added, making the total amount deposited in the treasury of the United States $550,000 as the trust fund, the interest on which alone is to be applied to the maintenance and uses of the Institution; and further, that the Regents be authorized to apply the remainder of the income of the residuary legacy to the current expenses of the Institution and the reconstruction of the building.

The Secretary stated that at the last annual session of the Board the disposal of the State stocks held by the Institution was left to the discretion of the Chancellor, Secretary, and Executive Committee; it having been found that it was not necessary, in order to meet the expenditures on the building during the year, to make a sale, it had been concluded not to dispose of these stocks, it being thought that the value of those of Virginia and Tennessee would increase, and that the accumulated interest due would in time be paid.

On motion of Mr. Garfield, it was

Resolved, That the Secretary present a statement at the next meeting of the value of the State stocks held by the Institution.

In the absence of Hon. Mr. Patterson, chairman of the Committee on the transfer of the Library, the Secretary stated that a bill had been presented in the House of Representatives by Mr. Patterson, which had been referred to the Library Committee of Congress, who had reported an act providing for the transfer of the Smithsonian library on the terms agreed to by the Board at its last meeting.

The reading of the annual report of the Secretary was then continued.

On motion of Mr. Wallach, the report was accepted.

The Board then adjourned to meet at the call of the Secretary.

WASHINGTON, *April* 28, 1866.

A meeting of the Board of Regents was held this day, at 11 o'clock a. m., in the laboratory of the Smithsonian Institution.

Present: Chief Justice Chase, Chancellor; Hon. L. F. S. Foster, Vice-President United States; Hon. L. Trumbull, Hon. J. W. Patterson, Hon. J. F. Farnsworth, Hon. R. Wallach, General Richard Delafield, Dr. T. D. Woolsey, and Professor Henry, the Secretary.

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Chief Justice Chase, Chancellor, took the chair.

A note from General Garfield, stating the cause of his absence from the meeting, was read.

The minutes of the last meeting were read and approved.

The Secretary, in accordance with a resolution of the Board at its last meeting, presented the following statement relative to the present value and original cost of the State stocks forming the extra fund of the institution:

Extra fund.	Rate at which bought.	Cost, including brokerage.	Present rate.	Present value.
$53,500 Virginia.....	93	$49,832 50	68	$36,380 00
12,000 Tennessee.....	94	11,167 50	91	10,920 00
75,000 Indiana.....	84	63,000 00	85	63,750 00
500 Georgia.....	100	500 00	100	500 00
100 Washington....	100	100 00	100	100 00
141,100		124,600 00		111,650 00

The Secretary presented to the Board the following copy of the act of Congress which had been approved by the President of the United States, April 5, 1866, relative to the Smithsonian library:

[PUBLIC—No. 20.]

AN ACT to provide for the transfer of the custody of the library of the Smithsonian Institution to the library of Congress.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That the library collected by the Smithsonian Institution under the provisions of an act approved August tenth, eighteen hundred and forty-six, shall be removed from the building of said Institution, with the consent of the Regents thereof, to the new fire-proof extension of the library of Congress upon completion of a sufficient portion thereor for its accommodation, and shall while there deposited be subject to the same regulations as the library of Congress, except as hereinafter provided.

SEC. 2. *And be it further enacted*, That when such library shall have been so removed and deposited, the Smithsonian Institution shall have the use thereof in like manner as it is now used, and the public shall have access thereto for purposes of consultation on every ordinary week day, except during one month of each year, in the recess of Congress, when it may be closed for renovation. All the books, maps, and charts of the Smithsonian library shall be properly cared for and preserved in like manner as are those of the Congressional library, from which the Smithsonian library shall not be removed except on reimbursement by the Smithsonian Institution to the treasury of the United States of expenses incurred in binding and in taking care of the same, or upon such terms and conditions as shall be mutually agreed upon by Congress and the Regents of said Institution.

SEC. 3. *And be it further enacted*, That the Smithsonian Institution, through its Secretary, shall have the use of the library of Congress, subject to the same regulations as senators and representatives.

SEC. 4. *And be it further enacted*, That the librarian of Congress shall be authorized to employ two additional assistants, who shall receive a yearly compensation of eight hundred dollars and one thousand dollars, respectively, commencing July one, eighteen hundred and sixty-six, to be paid out of any money in the treasury not otherwise appropriated.

SEC. 5. *And be it further enacted*, That the sum of five hundred dollars, or so much thereof as may be necessary, shall be appropriated, out of any money in the treasury not otherwise appropriated, to defray the expenses of the removal herein provided for.

Approved April 5, 1866.

The subject of selling the State stocks forming the extra fund, and of requesting Congress to receive the amount on the same terms as the original bequest of Smithson, was considered.

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On motion of Mr. Trumbull, it was

Resolved, That, in addition to the direction given at the last meeting, the Secretary be instructed to apply to Congress for an act authorizing the Treasurer of the United States to receive into the treasury on the same terms as the original bequest, such sums as the Regents may from time to time see fit to deposit, not exceeding, with the original bequest, the sum of one million dollars.

On motion of Mr. Patterson, it was

Resolved, That, in case the privilege is granted to increase the capital of the Institution, the Executive Committee, with the Chancellor and Secretary, be authorized to dispose of any or all of the stocks now held by the Institution, and to deposit the proceeds in the treasury of the United States.

General Delafield presented the report of the Building Committee; which was read and adopted.

The Secretary presented a number of communications to illustrate the correspondence of the Institution.

The Board then adjourned to meet at the call of the Secretary.

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EXTRACTS FROM THE CORRESPONDENCE OF THE INSTITUTION TO ILLUSTRATE ITS OPERATIONS, ADDRESSED TO THE SECRETARY, PROFESSOR JOSEPH HENRY.

From Joseph Leidy, Curator Academy of Natural Sciences.

PHILADELPHIA, *May* 1, 1866.

DEAR SIR: I write in answer to your letter of February 20, in relation to the donation of shells by the Smithsonian Institution to the Academy of Natural Sciences. I was obliged to wait until now to give the committee an opportunity to make out an account of the shells, which account I have just received from the chairman, Mr. Tryon. He reports as follows:

"The collection of shells recently presented to the Academy of Natural Sciences by the Smithsonian Institution embraces over 1,300 species, of which 793 are new to our collection; an extraordinary increase, due in great part to the fact that many of the species are those collected by the Wilkes exploring expedition, (described by Dr. Gould,) never before distributed. There are also a large number of new species from the west coast of North America, recently described by Mr. Carpenter.

"We were indebted to the Smithsonian Institution last fall for a donation of 800 species, including 300 new to our collection, being a first portion of the expedition shells. Uniting the two donations, we have thus received over 2,100 species, including 1,100 new to us, within six months. The accuracy of the names and localities renders the collection a valuable addition to our museum."

From J. Miguel Arroyo, Perpetual Secretary of the Mexican Society of Geography and Statistics.

MEXICO, *March* 24, 1865.

ESTEEMED SIR: This society has been highly gratified by the communication of your note of November last, in which notice is given it of the books which the Smithsonian Institution has had the goodness to remit. In effect, it has just received, at the hands of Señor D. José Ramon Pacheco, three large boxes containing the said books, which the society, with a high appreciation of the gift, has ordered to be placed in its library as a valuable addition to the collection which it already possesses regarding the United States. I shall not forget to seek, and will very soon send you the "Registro trimestro," which you have had the condescension to inquire for; and begging you to accept for your distinguished institution the thanks of this society for the favor conferred, I have the honor to subscribe myself your obedient servant.

From Jno. Evans, Governor of Colorado Territory.

DENVER, *July* 29, 1865.

DEAR SIR: The fossil jaw referred to in yours of the 12th instant was presented to me by Arapahoe Chief "Friday," who said he found it on Rock creek, a tributary of the Republican fork of the Kansas river, about one hundred and fifty miles nearly due east of this place.

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In September, 1863, I visited that region of country, vainly endeavoring to get the Indians together in council.

The general character of the country on the head of the Republican, corresponds with other parts of the great plains, in being covered with the buffalo grass on the clayey soils and bunch grass on the sandy hills.

The valleys along the streams are exceedingly fertile, being covered with tall grass, rushes, and other growths of luxuriant vegetation common to such localities in other parts of the country.

On the Whiteman's fork, Rock creek, and Arickaree fork, I found high bluffs, bounding rather narrow bottoms, the general surface of the country being slightly rolling on the general level of the bluffs. For some twenty-five or thirty miles east and west these bluffs show outcrops of a cretaceous limestone, corresponding with the mauvaises terres north of it.

This region has as yet been but little known. Captain J. C. Frémont crossed it in 1843, and Lieutenant Bryan, in his explorations for a wagon road from Fort Riley to Bridger's pass, in the year 1856, on his return trip, passed down Rock creek, but they appear to have given the country but a slight examination, as might be expected on such expeditions. From reports of parties who have crossed the country south of this region on the dividing ridge between the waters of the Platte and Arkansas rivers, near the 103° of west longitude, I am led to believe this cretaceous formation extends for some distance southward from the place that I visited on the occasion referred to.

It is a mistake to call this region a desert, for throughout my trip across the region at the head of the Republican, I found it everywhere covered with grass, furnishing the best of pasturage for stock.

Any further information that I can give will be cheerfully furnished.

From William F. Given, United States Vice-Consul

MARTINIQUE, ST. PIERRE, *January* 6, 1865.

SIR: I have the honor to acquaint you with the circumstances attending a very remarkable electric phenomenon which occurred in this city on the afternoon of the 23d of November last, while I was absent in the United States.

A heavy temperature, charged with electricity, had for several days pressed on the town, during which time there had been many and violent showers of rain. A sudden and heavy shower of rain had just ceased, when there came a sharp and short detonation like the booming of a cannon, accompanied by a flash of red light, and followed by the smell of burnt powder. At the same instant cries were heard from a house in the principal street, the north end of which had been struck by the lightning. On this end of the house there was a projection, which was shattered, and the rubbles and tiles were almost symmetrically thrown across the street. The fluid then passed along the houses to the right, and down the front of one of these to a distance some two or three feet below the level of the pavement; then passing outwardly, without in any manner deranging the pavement, which was of brick, it extracted from the side of the gutter a flat stone, nearly half a yard in length by about ten inches wide and eight thick. This stone was taken out of the gutter at a level with the bottom without interfering in any way with the surrounding mason-work, and, being taken by an oblique line upwards, was thrown against the house on the opposite side of the street. Here it took out six slats of a Venetian window and falling on the round table of the saloon, shattered its marble slab.

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From Charles Hale, United States Consul General.

ALEXANDRIA, EGYPT, *November* 1, 1864.

SIR: I have the honor to enclose for the Smithsonian Institution a map, prepared by the Venetian voyager Miani, in which his explorations upon the river Nile are contrasted with those of the English travellers Speke and Grant. The object of Dr. Miani in requesting that his map (which is accompanied by a printed explanation) should be communicated to some of the learned societies in America is sufficiently explained in his communication to me, of which I enclose a copy. Should you be able to respond in any way to the wishes of Dr. Miani, it will give me pleasure to make any communication to him which you may address to me for that purpose, through the Department of State at Washington.

[This subject was referred to the American Geographical and Statistical Society.]

From R. Brough Smyth, Secretary for Mines.

MINING DEPARTMENT,
Melbourne, January 25, 1865.

SIR: I have the honor to acknowledge the receipt of your letter of the 8th November, 1864, and I am directed by the honorable the minister of mines to forward to you, in accordance with your request, a complete set of papers, maps, and plans, &c., as noted on the margin, relating to mining in Victoria, which have been published by this department; and I am to state that Mr. Sullivan will be glad to receive in return the annual reports, geological reports, and other books, &c., which you offer to forward, and which, on receipt, will be bound and placed in the library of this department. Parcels intended for transmission to this department may be sent, as may be most convenient, either to Messrs. J. M. Mackay & Co., Leadenhall street, London, or to Messrs. Gibbs, Bright & Co., Liverpool, addressed to the honorable the Minister of mines, Melbourne, Victoria, Australia.

From General James H. Carleton, U. S. A.

HEADQUARTERS DEPARTMENT OF NEW MEXICO,
Santa Fé, N. M., August 23, 1865.

MY DEAR SIR: Last week I received from Surgeon B. J. D. Irwin, U. S. army, the enclosed pamphlet in relation to two *aerolites* which were found near Tucson, Arizona, one of which you have in the Smithsonian, and the other I had the honor to present to the city of San Francisco.

In speaking of these aerolites to his excellency Henry Connolly, governor of New Mexico, he informed me that he knows of one far surpassing, in point of size, either of these. As the one he speaks of is probably larger than any one now to be found in any cabinet in the world, I should like very much for the United States to secure possession of it.

In regard to the place where it may be found; the following are the governor's words:

"In the State of Chihuahua, and at the hacienda of Don *Juan Nepumocena Urquida*, say one hundred and eighty miles south of the city of Chihuahua, and directly on the road from that city to Mexico, and directly among the houses of the above-named hacienda, on the left-hand side of the road going to the

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city of Mexico, and within from thirty to fifty yards of the main road, is, what is supposed to be, an aerolite." Governor Connolly saw it nearly every year for twenty years, the last time in 1846, and he describes it as follows:

"It is a large mass of solid iron, standing like a post in the earth, from which it projects vertically about four feet. Its diameter at the surface of the earth is from two to three feet. It diminishes in size a little from the earth to its apex, which is irregularly rounded. How far it is imbedded in the earth has never been ascertained. Some small pieces, or chips, had been detached by cold chisels and carried off as curiosities; but these pieces were insignificant in point of size, and their removal has not disfigured the general mass as a specimen." The governor says he thinks the portion above ground would weigh a ton or more.

[It would appear from this and other information received at the Institution that an immense fall of meteorites must have taken place, in a recent geological period, in New Mexico.]

From T. A. Conrad.

PHILADELPHIA, *February* 16, 1866.

"Chalk has at last been found in this country—genuine chalk, with flints and abundance of fossils.

"Smoky Hill, Colorado, is an outlying mass of chalk, probably the only remainder of a vast mass which denudation has removed. If any expeditions should be going that route, it is well the scientific members of it should know this."

UNIVERSITY OF THE STATE OF NEW YORK,
Albany, January 12, 1866.

At a meeting of the regents of the University, held this day, the following resolutions were unanimously adopted:

Resolved, That the regents of the University of the State of New York gratefully acknowledge the receipt of the following valuable additions to the collections of the State cabinet of natural history, presented by the Smithsonian Institution, viz:

A series of specimens of rocks, minerals, and building stones, and a collection of nearly five thousand shells belonging to almost twelve hundred species, properly labelled and distinguished.

Resolved, That the secretary transmit to the Smithsonian Institution a copy of the foregoing resolution.

I hereby certify that the preceding is a true copy from the minutes of the regents of the University.

S. B. WOOLWORTH, *Secretary*.

[The following letter was referred to the Institution by Hon. I. DONNELLY, of the House of Representatives:

From S. Y. McMasters.

ST. PAUL, MINNESOTA,
January 23, 1866.

MY DEAR SIR: I have recently received a communication from the Rev. Charles Reynolds, missionary in New Mexico, in which is the following:

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"I had a call last evening, (September 1, 1865,) from Lieutenant Colonel Samuel Tappan, who has lived and served as a soldier in Colorado and New Mexico for several years. He begged me to write you in regard to the Navajo tribe in New Mexico, 250 miles south of Santa Fé.

"'They are 15,000 strong, on a reserve; are the best farmers in New Mexico; have no religious instruction; live in good houses; take but one wife; do the outdoor work, and treat their wives as women; the most hopeful of all Indians.

From another source I learn that their language is almost pure Welsh; that a Welshman can understand them at once; and that the blankets which they make so beautifully are made in precisely the same way as the domestic blankets in South Wales."

The last paragraph of the above is very startling. If true, it suggests a new train of thought for those engaged in the study of American ethnology. Nay, it may go far to favor the views of Judge Hall, that the southern Indian is of Phœnician origin, seeing that the Phœnician impress was strongly made on the Welsh, while the former were developing the tin mines of Britain. Nay, there is not a little to favor the idea that the natives of Wales and Cornwall were themselves of Phœnician derivation.

Now, my dear sir, would it be too much trouble for you to look into the records of the Indian bureau, and ascertain whether there is any record of the fact of the Navajo Indians having anything in language, manners, or customs resembling Wales? If you can learn anything of the kind, you will do a great service to the public, and eliminate, at once, more than half the mysteries of Indian history. True, this may not, in any way, affect the history of the more northern tribes, but it will strongly suggest the idea that Indian history, *in general*, is far more simple than Indians themselves think, or would have us believe.

If you can give me any information on this subject I shall be greatly obliged, and will endeavor to follow it up. If you should not have time to examine the matter, Professor Henry, of the Smithsonian Institution, might look into it.

Yours, faithfully,

[The following are the remarks of Mr. GEORGE GIBBS, to whom the foregoing letter was referred.]

WASHINGTON, *February* 12, 1866.

MY DEAR SIR: I have the pleasure of acknowledging your request that I would answer the queries of Mr. Donnelly's correspondent, and herewith submit such information as I can give, without more research than I now have time for.

The reports of the existence of Indian tribes speaking Welsh are very old, and their alleged location has been as fugitive as that of the Amazons. The story, I presume, took its origin in the tradition of Prince Madoc's voyage, the patriotism of his countrymen leading to the desire that they should participate with the northmen in the glory of discovering this continent. Whatever may have been his fate, it is certain that neither his followers nor the Scandinavians ever left their impress on an American language. As the knowledge of the various Indian tongues has advanced with the progress of settlement and more enlightened inquiry, the identical tribe, speaking Welsh, has receded like the mirage, until it is now sought in almost that last place upon the continent to which a foreign colony could have reached. The Zuñi Indians, a "pueblo" or settled tribe, living in the neighborhood of the Navajos, have enjoyed this reputation of late on the strength of the number of albinos found among them.

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The Hon. John R. Bartlett, now secretary of the State of Rhode Island, many years ago prepared a very elaborate paper, giving all the "authorities" on this subject, and, if I am not mistaken, published it at the request of the Welsh citizens of New York. He certainly can elucidate the history of the legend if Mr. McMasters desires to pursue the inquiry in that direction.

I do not, however, think it necessary to dwell upon that point, or the improbability of a change of color and feature. The character of the language of the Navajos is well known. Vocabularies, more or less extensive, have been obtained from time to time by various officers of the army, government agents, and by Mr. Bartlett himself. From these the late Professor Wm. W. Turner demonstrated, long since, its affinity with the great Athapascan or Chepewyan stock, a family occupying the northern part of the continent, next south of the Esquimaux, and extending from the shores of Hudson's bay to those of the Pacific. To this family the Apaches, neighbors of the Navajos, also belong. Mr. Hale, the philologist of the United States exploring expedition, had previously obtained vocabularies of the Tahculli or "Carriers," of Fraser river, of certain bands near the mouth of the Columbia, and of the Umpquas, to which he gave the collective name of "Tá-ka-li-Um-kwa." These Mr. Gallatin proved to be Athabascan tribes. In 1851 I collected new vocabularies on Rogue river and the Klamath, still further south, which Mr. Turner recognized as belonging to the same family. All these form links in the chain connecting the Navajos and Apaches with the parent stock, and show that the migration southward of the Athabascans took place by routes west of the Rocky mountains.

In fine, the Navajos and Apaches are offshoots of an extreme northern race who have wandered southward, just as the Camanches are a branch of the Shoshonees or Snakes of Oregon. I have by me vocabularies of almost every tribe of this great family, and can assure you that the verbal similarity is conclusive as to their common origin. But my opinion is not needed in corroboration of that of Turner and of Buschmann.

As regards the blankets, they are the common pattern of the Mexican "sarape," made, it is true, exceedingly well.

Very respectfully, your obedient servant.

From M. M. Lisboa, late Brazilian minister to the United States.

RIO DE JANEIRO, *December* 17, 1864.

MY DEAR SIR: I did not forget my offer to you, and immediately on my arrival here, in July last, I made application directly to the Emperor for the remittance of contributions to the Smithsonian Institution, and through his Majesty's gracious intervention I obtained orders which gave me satisfaction, and will, I have no doubt, be agreeable to you also.

I have since crossed the ocean again, and am just arrived from Europe; this absence has delayed my addressing you this letter.

The work of Descourtilz is ready to be offered to the institution—that is to say, the first volume, for the continuation has not yet been published; and they are preparing at the museum a collection of birds for the same destination. This collection is not complete; but I have taken upon myself to declare that that was not an objection, as a complete collection can only be made by degrees.

I have also obtained an order from the Historical and Geographical Institute of Brazil that a set of their three-monthly publication (the Revista) be sent to you. You will find that some of the volumes are missing, because the boxes in which they were kept have been destroyed; but if they are republished they will be sent to you.

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All these presents will be delivered here to Mr. Monroe, the United States consul, with whom I have communicated, to insure their remittance, as I agreed with you and Mr. Seward. I find, however, that he has received no instructions from the State Department as I expected, and beg to suggest to you the propriety of speaking again to the Secretary of State to request him to forward said instructions to the consul.

Please to let me know that you have received this letter, and you may deliver your answer to Mr. Fleury, attaché to the Brazilian legation at Washington.

Yours, very truly.

From Don F. L. L'Burlamaqui, director.

BRAZILIAN NATURAL HISTORY MUSEUM,
Rio de Janeiro, January 4, 1865.

MY DEAR SIR: I am ordered by the Brazilian government to send to the Smithsonian Institution, of which you are the worthy secretary, a collection of natural history specimens of this country, taken from the duplicates existing in this museum.

Performing this duty, I should be very happy if I were enabled to send you objects worthy of being ranked among your magnificent collections; but, unhappily, I cannot do it in this opportunity, because the Brazilian museum is exhausted with the returns made to other museums.

I send a few ornithological and entomological specimens and some bones of fossil animals.

I send also a copy of the "Ornithologie Brésilienne," a work which shall continue and form four or five volumes.

I profit by this opportunity to let you know that it would be very agreeable to this museum to possess the interesting memoirs of your illustrious society.

I am, sir, with the highest consideration and respect, yours, very truly.

From the Museum of the city of Bern.

BERN, *March* 25, 1865.

HONORED SIR: By order of the commissioners of the museum of the city of Bern, the undersigned beg leave to trouble you with the question whether it will be practicable for them to obtain, through your kind intervention, a specimen of the bison, by which is meant the well-preserved skin, with skull and extremities, of a full-grown male animal of that species, and what will be the price of such an acquisition? On account of the narrowness of our financial means we find ourselves necessitated to place this question in the foreground, and on that account also address ourselves directly to your interposition, holding ourselves always ready to acknowledge the favor by any reciprocal service which may lie in our power. Encouraged by the friendly assurances of Mr. Fogg, envoy of the United States of North America to the Swiss confederation, we prefer our request to you in the hope of being favored with an obliging reply to the above-proposed questions.

Be pleased to accept the assurances of the high consideration with which we have the honor to remain, (in the name of the commission of the museum of Bern,)

C. FISCHER, *President.*
B. STUDER, *Secretary.*

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From Charles F. Loosey.

AUSTRIAN CONSULATE GENERAL,
New York, am. February 13. 1865.

SIR: The Imperial Library of Vienna having published a repertory of the oriental manuscripts of the library, translated into Latin by the philosophical-historical class of the Academy of Sciences, under the title of "Tabulæ codicum manuscriptorum in biliotheca palatina Vindobonemi asservatorum," and placed a number of copies of the same at the disposition of the imperial royal lord steward's office requesting that those public institutions and scientific societies which have favored the imperial library with donations may be presented with a copy of the repertory, I am directed by the imperial royal ministry of foreign affairs to transmit to the Smithsonian Institution such copy, and beg to inform you that I have forwarded to you by mail the repertory above referred to.

I have the honor to subscribe, yours, most respectfully.

From the British minister.

WASHINGTON, *November* 6, 1865.

MY DEAR SIR: Allow me to introduce to you Dr. H. Berendt, an American gentleman of science, who is about to visit Honduras and its neighborhood, under the patronage of the Smithsonian Institution of this place. His objects are to obtain a more accurate knowledge of the geography and natural history of that region, and to explore what is still unexplored. If you can assist him, you will oblige,

Yours, faithfully,

FREDERIC W. A. BRUCE.

JNO. GARDINER AUSTIN,
Lieutenant Governor of Honduras.

From Señor Irisarri, minister from Guatemala.

BROOKLYN, *November* 2, 1865.

SIR: In answer to your favor of the 30th ultimo, I have to say that I am not personally acquainted myself with the corregidors of Peten and Verapaz. Therefore it seems to me more conducive to the object of having Dr. H. Berendt well recommended to the authorities of the different departments he intends to visit, to write by the steamer of the 16th instant to the minister of foreign affairs of Guatemala, telling him Dr. Berendt's object, and the minister will no doubt write to the corregidors recommending them to tender the doctor any assistance or information in their power, to further such useful undertaking.

In case Dr. Berendt wishes it, I send for him a passport, recommending him officially and especially to whatever authorities he may meet in Guatemala.

The secretary to this legation is the member for Peten in the chamber of representatives of Guatemala, and although not personally acquainted with the corregidor, is known to the latter by name and may, if desirable, give a letter for the corregidor.

I have the honor to be, sir, very respectfully, your obedient servant,

A. T. DE IRISARRI.

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Don Antonio José de Irissarri, envoy extraordinary and minister plenipotentiary of the republic of Guatemala for the United States of America, to the authorities of the departments of Yzabal, Vera Paz, and Peten.

Inasmuch as Dr. H. Berendt is about to undertake a scientific exploration in those countries under the auspices of the Smithsonian Institution, the advantages resulting from which will inure as well to Central America as the rest of the world, in the advancement of historical and geographical knowledge, and inasmuch as such enterprises ought to be promoted by the authorities of the countries in which they are undertaken, I would hope that this may serve as a general recommendation for Dr. Berendt, to the effect that he may be received in all places in a manner suitable to the meritorious objects of his expedition.

Given at Brooklyn the second of November, 1865.

A. J. DE IRISSARRI.

From Señor Luis Molina, minister from Costa Rica, &c.

LEGATION OF HONDURAS,
Washington, November 8, 1865.

DEAR SIR: In answer to your favor of 31st of October, ultimo, which only came to my hands three days ago, I have the pleasure to send you, as requested, two letters, enclosed herewith, for the collectors of Omoa and Trujillo, respectively; and, besides, another to the minister for foreign relations, because there is plenty of time before Dr. Berendt may go to Honduras, and I think the best plan is to get the necessary orders from the government at Comayagua to speed his good work.

I have the honor to be, with great respect, your obedient servant.

WASHINGTON, *November* 8, 1865.

At the instance of the worthy secretary of the Smithsonian Institution, established in this capital, in conformity with the will of its founder, for the promotion of human knowledge, I have the honor to recommend to you Dr. H. Berendt, a naturalized citizen of the United States, an accomplished gentleman and man of science of great merit, who, under the auspices of the Institution and as its agent, purposes a visit to Central America with a view to exploring the less known portions of Guatemala and the coasts of that republic, in order to augment the knowledge which we at present possess of their geography and natural history.

The enterprise is purely scientific, interesting to the learned world, and cannot fail especially to redound to the advantage of the people and government of Honduras as far as concerned in its execution; under which impression I can entertain no doubt that you will extend to Dr. Berendt and his assistants the protection, aid, and facilities which may be in your power towards the furtherance of their objects, agreeably to the request of the representative of the republic in the United States.

Be pleased to accept the assurance of the distinguished consideration of your obedient servant,

LUIS MOLINA.

The ADMINISTRATOR
of the Puerto de Omoa, Honduras.

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WASHINGTON, *November* 7, 1865.

Dr. Berendt, accompanied, perhaps, by an assistant, is about to proceed to Central America, as an agent and under the auspices of the Smithsonian Institution in this capital, for the purpose of increasing the knowledge which we already possess respecting the geography and natural history of certain unexplored parts of Guatemala and the coasts of Honduras.

This purpose recommends itself by its intrinsic interest to the scientific world, and more especially to the government and people of that republic; and Dr. Berendt has been strongly represented to me by Professor Henry, the distinguished secretary of the above institution, as being a gentleman of great attainments in science, and of much personal merit.

Upon these considerations, I pray you to accord to the Doctor the regard which he merits, and to his enterprise the protection, aid, and facilities which may be in your own power, or to procure them for him from the functionaries with which you may be in correspondence.

Dr. Berendt is a native of Germany, and a naturalized citizen of the United States.

It remains only to subscribe myself, with the highest respect, your obedient servant,

LUIS MOLINA.

The ADMINISTRATOR *of Trujillo, Honduras.*

WASHINGTON, *November* 7, 1865.

I have been informed by the highly esteemed secretary of the Smithsonian Institution, Professor Henry, that Dr. H. Berendt, a citizen, by naturalization, of the United States, has formed the design of prosecuting, under the auspices of the Institution, either alone or accompanied by an assistant, an expedition into certain unexplored regions of Central America, with a view to increasing the amount of our present knowledge of their geography and natural history. This visit, purely scientific, will embrace the departments of Peten, Vera Paz, and Golfo Dulce, in Guatemala, and will terminate on the coast of Honduras.

As far as regards the exploration of their own coasts, the people and government of Honduras will find themselves especially interested in this enterprise, so strongly commended, as Professor Henry well observes, to the favor of the whole scientific world; and I have therefore consigned to the worthy professor the papers which he has been pleased to request of me in the name of the Institution for the authorities of the northwest coast, recommending to them to extend to Dr. Berendt all the protection, aid, and facilities in their power and which may be necessary to secure success to his meritorious undertaking. I have sent to him, moreover, this letter, directed to your excellency, in order that the supreme government may have knowledge of the projected enterprise, and that, if the opinion of its merits be as favorable as I think it will be, orders may be graciously issued to the authorities of the northwest coast in conformity with the objects indicated in my recommendations above referred to.

I should add that Professor Henry speaks of Dr. Berendt as "a gentleman of great merit and of high accomplishments in point of science."

Allow me the honor of subscribing myself, in conclusion, your excellency's very obedient servant,

LUIS MOLINA.

His Excellency Señor Don FRANCISCO CRUZ,
Minister of Foreign Relations of Honduras, &c.

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From J. Rosing, Chargé d'Affaires.

HANSEATIC LEGATION,
Washington, D. C., February 25, 1865.

SIR: I beg to inform you that a society has been constituted in Bremen for the promotion and dissemination of natural science and knowledge.* They have requested me by their secretary, Dr. Phil. Franz Buchenan, to further their ends on this continent, and I think I cannot do better than to recommend the young society to your kind consideration. They will be very grateful for any communication on the part of your Institution, and endeavor to give in exchange whatever may be of interest for you and in their reach. They propose publishing regular annual reports and periodicals, and dare to offer regular exchanges, although conscious that their doings, owing to the smallness of their means, will by no means compare with those of your proud Institution. The more happy you could make this little fraternity ardently devoted to science.

Allow me, sir, again to offer you the assurance of my very high esteem as your most obedient servant.

From the same.

SIR: The government of Bremen, sensible of so many acts of liberality of yours, have directed me to offer you the accompanying volume, of entirely Bremen origin and workmanship, as a contribution to the library of the Institution. It is a publication made by the society for Bremen history and antiquities, and gives an illustrative description of that most venerable and accomplished monument of the history of the republic, the court-house, at the same time the seat of the government and senate.

I shall be gratified, sir, if you would kindly accept this small gift as a token of good will on the part of the Bremen government and scientific societies towards your most useful institution, and beg to solicit the continuance of your highly estimated favor.

From the same.

HANSEATIC LEGATION,
Washington, D. C., April 8, 1865.

SIR: I am happy to learn, from your kind note of the 5th instant, that the Smithsonian Institution will be pleased to enter into scientific correspondence with the new society for the promotion of natural science, at Bremen, whose establishment I had the honor of announcing to you recently.

It is with gratification that I accept your liberal offer of a package of your publications for the society; if it could be ready by the end of next week, I shall have an opportunity of sending it off directly with other official matter.

With many thanks for your favors, believe me, sir, to be, with high regard, your most obedient servant,

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From J. George Hodgins, Department Superintendent.

DEPARTMENT OF PUBLIC INSTRUCTION FOR UPPER CANADA,
Toronto, March 26, 1866.

SIR: I have the honor to state, in reply to your letter of the 10th ultimo, that the numbers of the Journal of Education for which you have applied have been sent to you.

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*Naturwissenschaftlicher Verein.

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You are already aware, from previous correspondence with this department, that the legislature of the province, at the instance of the chief superintendent of education, authorized the establishment of a meteorological station in every county in Upper Canada in connexion with the department of public instruction, the observers being the head masters of grammar schools. The following instruments were obtained from England for each station: Barometer by Negretti and Zambra; dry and wet bulb thermometers by the same; and maximum and minimum thermometers by Cassella. These were compared with standards at the new observatory by Mr. Glaisher, and again at the Toronto observatory. They are excellent instruments, and may be relied on. Each station is also supplied with a wind vane and rain gauge. Full instructions and tables, together with forms for periodical reports, are provided for the observers.

As some of the counties have hesitated to pay for the instruments, and in others the observations were not duly taken, it was deemed necessary in 1865 to obtain further legislation and regulations on the subject. Although some observers faithfully performed their duty under the former system, it was found that more satisfactory results would be obtained by restricting the number of stations and making a pecuniary allowance to observers for their labors. Our stations are now ten (10) in number, situated at the most favorable points between longitude 83° and 74° west, and latitude 42° and 46° north. The observers are educated men, and graduates of universities. Arrangements have also been made for the careful examination and comparison of the records of the observations at this office. The results will appear monthly in our official journal.

I send herewith copies of some recent regulations which we have issued to our stations.

As our meteorological establishments are now being placed on a more satisfactory footing, we may hope to contribute information of permanent value; and your institution would confer a favor on this department by sending us as complete a series of its meteorological reports, with any papers bearing on the subject, as it may be able to afford.

I have the honor to be, sir, your obedient servant,

JOSEPH HENRY, Esq., LL. D.,

Secretary Smithsonian Institution, Washington, D. C.

From A. Panizzi, Principal Librarian.

BRITISH MUSEUM, *July* 20, 1865.

SIR: I have to acknowledge the receipt of your letter of the 18th May last, informing me that on behalf of the Smithsonian Institution you have forwarded to the British Museum, as a present to the trustees, upon certain conditions, a type series of fossils from the upper Missouri, collected by Lieutenant Warren, and Dr. Hayden.

In reply, I have to express the thanks of the trustees of the British Museum for the very obliging offer which the managers of the Smithsonian Institution have made to them, and I am to assure you of the readiness of the trustees to reciprocate the kind feeling of interest which the managers have shown in the improvement of the collections of the British Museum. Although the trustees cannot accept a present under restrictive conditions, they are prepared, in this instance, to meet the wishes of the managers of the Smithsonian Institution so far as may be in their power, and I am accordingly directed to send you herewith the copy of a letter on this subject from Professor Owen, the superintendent of the departments of natural history in this museum, on whose views the trustees are disposed to act.

I have the honor to be, sir, your most obedient servant,

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[The condition referred to as required by the Smithsonian Institution is that suitable returns be made from the duplicates in the collections of the Museum when called for. This condition is made on the part of the institution to favor the formation of museums in this country.]

BRITISH MUSEUM, *July* 20, 1865.

DEAR SIR: I enclose the letter and form which you brought me on the 17th instant from the principal librarian. In reference to the fourth condition, after due inquiry and inspection, I should be prepared, when required, to submit to the trustees a series of duplicates, in my opinion suitable in the sense of equivalency, as a return for the type series of fossils proposed to be presented conditionally by the Smithsonian Institution, Washington, United States.

I remain, dear sir, yours truly,

RICHARD OWEN.

THOMAS BUTLER, Esq.,
Assistant Secretary British Museum.

From Professor William Hincks.

TORONTO UNIVERSITY, *March* 26, 1866.

DEAR SIR: The additional proof just received of the liberality with which the Smithsonian Institution uses its duplicates in promoting science claims something more than the mere formal expression of our gratitude, and is, I assure you, very highly appreciated by myself and my colleagues in the management of our museum, and by all the authorities of our University.

Permit me to explain that the objects of the museum are first to afford the best attainable materials for instruction in the several branches of natural science to the professor of that department in University College; secondly, to afford opportunities for private and special study to any persons seeking them; and thirdly, to offer a pleasing and instructive exhibition to the public at large, which is opened at all proper hours without any payment, and is extensively visited both by our own citizens and the numerous travellers from the United States, the most intelligent of whom have expressed themselves in the most flattering terms respecting its interest and beauty. We perhaps excel most in birds, and so far as the representation of the few families that remain unrepresented in the collection, and the completion of our North American series, nothing is more desirable to us. In mammalia we aim chiefly at obtaining the moderate-sized native animals, and a few of the more deviative forms, not having either space or funds for attempting more. We have a good instructive series of shells and some special collections, and this branch is a favorite one. We have many fine insects, and greatly desire to extend and improve that collection. We have some excellent specimens of fishes, both British and Canadian, and a few Chinese and West India. We have some crustacea and echinodermata and a few good polypifera, but are comparatively deficient in these interesting branches. Our botanical collection includes about 7,000 species, chiefly European and North American, with many fine forms from all parts of the globe. We are somewhat crippled in funds, which checks very rapid increase, and we have no means of accumulating duplicates to any extent, but we should feel the sincerest pleasure in rendering any service within the reach of our efforts to the Smithsonian Institution as a proof of our estimate of the value of its contributions to science and the liberality with which it seems to be conducted. Our specimens are throughout systematically arranged and handsomely exhibited. I should have said above that we have some good reptilia and amphibia, yet very few comparatively.

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From the Rev. E. Petitot to Wm. L. Hardisty, Esq., (communicated by Mr. Hardisty.)

[Translation.]

FORT RAE, HUDSON'S BAY TERRITORY, *June* 20, 1864.

MY DEAR SIR: I take advantage of Mr. Smith's departure to offer you the assurance of my respect and perfect consideration. I thank you for myself and my converts for the permission you have kindly given me to take up my quarters within the bounds of Fort Rae.

As Mr. Smith will perhaps tell you, I have had an opportunity of visiting the tribes which inhabit the interior of the country comprised between Great Bear lake, Copper Mine river and Fort Rae. It is through the kindness of that gentleman that I have been able to comply with the desire of the Indians, and I am infinitely indebted to him for it. As many incidents of this journey were of a kind to interest a "voyageur," I shall allow myself to amuse you with a few.

In the first place I will spare you the fatigues of a journey on snow-shoes, which, notwithstanding your reputation as a pedestrian, you will doubtless not regret performing without stirring from your easy-chair. I will transport you, therefore, at once to Lake Kleritié, eight days' travel by that method to the north-northeast of Fort Rae, and ten or twelve days by canoe. There, upon a pretty high hill, is situated the camp.

A magnificent view is enjoyed from this point of the above-named lake and of Lake Kamitié, which empties into it. Their immovable and frozen surfaces winds between feldspathic mountains, sometimes naked or eaten into by lichens and mosses, sometimes covered with forests of thorns. But these trees are only pigmies of five or six feet in height; wretched shrubs whose roots are buried in a thick bed of yellowish lichens, and whose dwarfed and vertical branches allow the rays of the sun to pass through. On the left extend arid steppes, dotted with pools of stagnant water, serving as a pasturage for herds of rein deer which run unceasingly over the surface of the lake. This country is a true Arabia Petræa, where the eye takes in only blocks of granite, masses of coarse porphyry, diorite, and especially of feldspathic orthose. Here there is no stratification, no talus of debris or metamorphism; the mountains have undergone no degradation, and the waves which beat against their foundations dash themselves in vain. Upon the slope opposite to these rocks stretches the Ot'-el-nérè or flat country of the Esquimaux, which, despite its name, is composed only of mounds and rounded hills. I did not go there only because I had more work than I could perform among my Indians. It is time that I spoke of them.

They belong to the great Montagnais or Ténè nation and to the Slave tribe, but their idiom is very different from the language of the Ténès. Many of these Indians have already made the voyage from Portage la Roche, and this present year two of them are preparing to repeat it. The young people and grown men alone visit Fort Rae, or that at the Forks, or have intercourse with the whites. The rest of the tribe, the old men, women and children, not only have never seen the missionaries, but even a white man of any sort. I except, however, King Beaulieu, who visited their midst in May, 1863, but did not ascend as far as I, by nearly three days' journey.

It is a singular spectacle, that of a horde of these savages on their march over a frozen lake, and it was the first time that I have been permitted to witness it. As far as the eye could reach, a long file of sledges and dogs, women loaded with burdens and young children, the cries of infants, the barking of dogs, and the shouts which their conductors uttered—the whole forming a picture as curious as wild.

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I have told you that these poor Indians have never yet seen a missionary, which is saying that they had not a trace of Christianity. Thus disease (I speak of moral disease) has made frightful ravages among these unfortunate tribes. It cannot be denied, and it is my conviction, that we shall assist at the obsequies of the Dog Rib nation, (Plats cotés de Chiens.) The incredible venereal excesses to which these wretched people were formerly addicted has destroyed the constitution, although so robust, of the Indians, and abridged half their existence. Among them young persons are only seen emaciated and frail, with bony and hectic faces. Pulmonary consumption slowly undermines the tribe. During the forty-four days which I passed among them, I ministered to two of them on the death-bed. On my return to Fort Rae I found five graves yet fresh, and upon the journey of the Toaut Onédés river two others; a tenth savage is dying at the moment of my writing you these lines. If you add to this figure, already unhappily too great, the thirty-four Indians who died during the last winter, you have forty-four deceased in the space of six months, an enormous total considering the number of this tribe, (about 1,200, according to my enumeration.) To pthysis, which appears to be, with the venereal disease, the scourge of this people, is added influeneza, which extends its ravages especially among the children.

Poor people, they are very different in their morals from what they were formerly. The beneficent light of the gospel, in entering their hearts, has opened their eyes to their past excesses; but as Adam, converted, they carry the chastisement of their guilt with them.

It is to these causes, venereal excess and incestuous unions, that I attribute the general stuttering of these Indians. Among ten there was not a single one who was not a stammerer.

I have dwelt long upon these Indians, my dear sir. What I have told you is not for the purpose of exposing the scourges of humanity. My duty is to hide them. But they speak eloquently in showing that the theory of the primitive man, the happiness of man free and cut off from religion, is but an Utopia, worthy of the philosophers who invented it.

Once more I thank you for having afforded me the means of doing a share of good to these poor Indians. They will repay you some day. I refrain. It is time to close this long farrago, which has become tedious.

Will you, while excusing my loquacity, receive anew the assurances of the distinguished consideration with which I am, sir, your very humble servant.

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EULOGY

ON THE LATE

JOSEPH G. TOTTEN,

BREVET MAJOR GENERAL,

LATE CHIEF ENGINEER U. S. ARMY, AND REGENT OF THE SMITHSONIAN INSTITUTION.

By J. G. Barnard, Lieutenant Colonel of Engineers, and Brevet Brigadier General U. S. A.; Brigadier and Brevet Major General U. S. V., A. M., LL. D., N. A. S.

[Reprinted from the Annual of the National Academy of Sciences for 1866.]

[Instead of preparing a eulogy myself, as requested by the Board of Regents, of their lamented associate General Totten, I have thought the service would be better rendered by presenting the facts I had gathered on the subject to General Barnard, and by adopting his tribute to the memory of one so long and so efficiently connected with the Institution. J. H.]

Mr. President and Gentlemen of the Academy:

In conformity with a clause of the constitution of this Academy, and in obedience to your instructions, I am here to render the tribute of a formal biographical notice in commemoration of one who was numbered among our most venerable and most honored associates. If, in the language of one of our body, on a previous and similar occasion, "it is no unreasonable assumption that public benefit and individual incentives may be derived from the history of any man whose scientific services have rendered him worthy of admittance to your number," that assumption must have a peculiar force when it applies to one who has "finished his course," and has filled a life, protracted beyond the usual term, with scientific labors of no ordinary variety and magnitude.

It is but little more than two years since we first met for the great and important work of organizing this National Academy, and with us—of our number, if not personally present—were "both the gray-headed and very aged men." But, alas! these, like autumnal leaves, are rapidly falling away, and already the places of a Totten, a Hitchcock, and a Silliman know them no more, save in the records of their lives and deeds, and in the grateful memories of their associates. What a trio of names, glorious in the annals of science, is this! Well may they be incentives to us who yet remain to strive that we may worthily replace them, and establish for this Academy a reputation for usefulness and science which their honored bearers have acquired for themselves.

Although there may be many among us more capable than myself of doing justice to the memory of our departed colleague, I feel grateful that the lot has fallen to me. Placed under General Totten on my first entrance into the military service—almost in my boyhood—my relations to him, both personal and professional, have ever since been continuous and intimate. Under obligations to him of no ordinary nature, I could not do otherwise than regard him with reverence and affection. If I fail, therefore, it shall not be because my heart is unmoved, nor because I am insensible to the magnitude of my task.

JOSEPH GILBERT TOTTEN was born in New Haven, Connecticut, on the 23d of August, 1788. His grandfather, Joseph Totten, came from England before

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the war of the Revolution, and engaged in mercantile pursuits in New York. Attached to the cause of the mother country, he left that city, after the acknowledgment of our independence, for Annapolis, Nova Scotia. It would appear that his two sons remained in this country, since one of them, Peter G. Totten, married in 1787 Grace Mansfield, of New Haven, a very beautiful woman, who died a few years after her marriage, leaving two children, the subject of this memoir and a daughter, Susan Maria, who married Colonel Beatty, an English officer, and who is still living, a widow, in London. After the death of Mrs. Totten, which occurred when her infant son was but three years old, the father, having been appointed United States consul at Santa Cruz, West Indies, took up his future abode on that island, leaving his son under the care of his maternal uncle, Jared Mansfield, a graduate of Yale College, 1777, and a learned mathematician. The boy continued to be a member of Mr. Mansfield's family until the latter removed to West Point, having been appointed captain of engineers and a teacher in the United States Military Academy, then just organized by act of Congress of 1802. Young Totten's first teacher was Mr. Levi Hubbard, brother to the rector (at that time) of Trinity church, New Haven; afterwards his education was carried on under the personal superintendence of his uncle. Of the period of his schoolboy life we have some glimpses, through the recollections of an old friend and schoolmate, Mr. Ralph Ingersoll of New Haven, who speaks of him as a bright, noble youth, of fine mind, fond of study, and always at the head of his class, gentlemanly in his deportment, and greatly beloved.

Young Totten went to West Point with the family of his uncle in 1802. He was soon after appointed a cadet. He remained at West Point one term, that of 1803, and perhaps part of that of 1804. He was promoted to a second lieutenancy in the corps of engineers, July 1, 1805.

The venerable General J. G. Swift, recently deceased, his brother engineer officer and life-long friend, describes him at West Point as "a flaxen-headed boy of fourteen years of age, a good scholar, and to me a most interesting companion."

Captain Mansfield, having been appointed surveyor general of Ohio and the western Territories, November 4, 1803, induced his nephew to accompany him to the west as an assistant on that first systematic survey of any of the new States of the Union. Here that faculty which so distinguished him through life, of keen observation of whatever was most interesting connected with or incidentally brought under his notice by his professional pursuits, displayed itself at this early age in a noteworthy manner. The vestiges of an earlier race than the red man, which have since been made the subject of the researches of a Squier and a Davis, of a Lapham and of a Haven, and to which, during recent times, fresh attention has been directed by the developments of the high antiquity of the human race in Europe as shown by similar relics over the surface of that country and by the lacustrine remains in Switzerland, attracted his notice and were made the subjects of survey. Although these investigations were not published, they are, I believe, the first we have record of; those of Caleb Atwater, who is called by Squier and Davis "the pioneer in this department," not having been published until 1819. Full descriptions and measurements of several of these mounds, particularly that of Circleville, were made and sent to his friend, J. G. Swift. To most youths of his age those remains of structures, built

> "while yet the Greek
> Was hewing the Pentelicus to forms
> Of symmetry, and rearing on its rock
> The glittering Parthenon,"

would have been passed over with vague curiosity or listless indifference. Not so with young Totten. Although not able, perhaps, to perceive all the eth-

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nological importance which has since been attached to them, he could yet appreciate them as objects of high interest, as vestiges of the races which had inhabited the country, and give his time to their examination and measurement.

During the two years which he passed in the office of his uncle at Ludlow's station near Cincinnati, he was a companion of several young men who subsequently became conspicuous, among whom were Nicholas Longworth, Samuel Perry, Daniel Duke, Thomas Pierce, and Peyton Symmes, all of whom are now dead. His tastes, however, led him back to the army, (from which he had resigned shortly after his promotion,) and, February 23, 1808, he was reappointed a second lieutenant of engineers, his commission bearing the same date as that of his subsequent friend, brother engineer officer, and professional associate, Sylvanus Thayer, of national fame as for so many years superintendent of the Military Academy, and as the officer to whom is mainly due its present high grade among the military and scientific institutions of the world. Lieutenant Totten commenced his career as a military engineer under Colonel Jonathan Williams, the first chief of the corps, and was engaged on the construction of Castles Williams and Clinton, New York harbor.

At the commencement of the war with England Lieutenant Totten was assigned to duty as chief engineer of the army under Brigadier General Van Rensselaer, in the campaign of 1812, on the Niagara frontier, and in that capacity took a conspicuous part in the battle of Queenstown. He was subsequently chief engineer of the army under the command of Major General Dearborn, in the campaign of 1813, and of the army under Major General Izard and Brigadier General Macomb, in the campaign of 1814, on Lake Champlain. Having been promoted to a captaincy in 1812, he was in June, 1813, brevetted major, for "meritorious services," and September 11, 1814, lieutenant colonel, for "gallant conduct at the battle of Plattsburg;" his efficient services as an engineer in the defensive arrangements of that field having contributed powerfully to the successful issue.

The termination of the war may be considered as the close of one period in the life and services of General Totten, and the commencement of another; or rather it may be said, that the events of which we have traced a faint outline were but the preparation and training of his mind for the real work of his life. Reared under the eyes and guardianship of a relative distinguished for his mathematical attainments, receiving as extensive a military and scientific education as West Point at that early day could give, called by his position in Surveyor General Mansfield's office, not only to exercise the science which the duties involved, but to take extended views of our country as to the interconnection of its parts, and their relations to commerce or war, then practically taught the duties of a military engineer in what concerns the defence of harbors, and finally carried through the ordeal of actual war in the campaigns of armies in the field, he was now prepared for the great work of his life—the fortification of our seaboard frontier. When I call this the great work of his life, I am not unaware that it is but a *part* of that work—still the most important part, and one to which his other labors may be considered incidental.

A brief reference to the condition and progress of sea-coast defence at that period is here appropriate. Previous to the Revolution, our seaport towns had not grown into large cities, nor were there great naval establishments or military depots to invite the enterprises of an enemy. During that contest, the harbors of Boston, New York, Philadelphia, Charleston, &c., had been, to a certain extent, "fortified" against naval attack by slight earthen batteries, or in some few cases by small and (as we would now call them) insignificant earthen forts. A work of palmetto logs and sand on Sullivan's island, Charleston harbor, mounting but 30 guns, decisively repulsed, early in the revolutionary war, the attack of the British fleet under Sir Peter Parker, consisting of two frigates and six sloops-of-war, carrying about 270 guns, destroying four of the smaller vessels, and

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inflicting a loss of 205 in killed and wounded (eleven times as many per gun employed against them as the English lost at Trafalgar;) thus decisively demonstrating the value of fortifications, and the superiority of land batteries to ships. But with an immense sea-coast line and sparse population, it was impossible to hold our seaports against the great naval power of the mother country, and the war of the Revolution was mainly a contest of land forces. After the attainment of our independence, the importance of fortifying our harbors impressed itself on the mind of General Washington, and the political agitations which grew out of the French Revolution, and which threatened to involve the new-born Power of the West, prompted early action in this direction. In that day war, though a science, had not grown into one which makes tributary to it all other sciences, as it has since done. Fortification, indeed, had reached a high degree of perfection, but the elaborate treatises on that subject scarcely touched the subject of harbor defence, so little art was apparently supposed to be involved in throwing up batteries to defend the entrances of ports. The art of a Vauban and Cormontaigne was little concerned in the war from which we had just emerged, and the circumstances were too dissimilar, the theatre too large and too thinly populated, the armies engaged too small, to afford to the precepts of a Lloyd or a Templehoff much apparent applicability. While the war developed generals of unquestionable ability in the spheres in which they acted, it seemed to be conceded, that for military science, and especially for the art of fortification, we must look to Europe. Hence we find so many of the early harbor defences of our principal seaport towns to have been built under the direction of foreign officers who had found employment among us, and who did not always possess the knowledge of the art to which they laid claim.

The importance of a Military Academy for the training of officers for the military service, and especially for the engineers and artillery, had been acknowledged even from the very outset of the struggle for independence. We find even the Continental Congress appointing a committee "to prepare and bring in a plan of a Military Academy," and the first Secretary of War, General Knox, in an official report to the President, discusses the subject at much length. The establishment of such an institution is known to have been a favorite object of General Washington, and in his annual message in 1793 he suggests the inquiry, "whether a material feature in the improvement" of the system of military defence "ought not to afford an opportunity for the study of those branches of the art which can scarcely ever be attained by practice alone;" and in 1796 he states that "the desirableness of this institution had constantly increased with every new view he had taken of the subject."

An act of Congress of 1794 had provided for a corps of artillerists and engineers, to consist of four battalions, to each of which eight cadets were to be attached, and made it the duty of the Secretary of War to procure books, instruments and apparatus for the benefit of said corps; and in 1798 Congress authorized the raising of an additional regiment, increased the number of cadets to fifty-six, and empowered the President to appoint four teachers of the arts and sciences necessary to the efficiency of this "corps." Of the four teachers, none were appointed prior to January, 1801, at which time Mr. George Barron was appointed teacher of mathematics, and the institution, "which was nothing more than a mathematical school for the few cadets then in the service," was nominally established.

It was soon discovered that the regiment of artillerists and engineers could not combine with effect the two duties assigned to its members, and a law was therefore framed separating them into two corps, and declaring that the corps of engineers should be stationed at West Point, New York, and should constitute a Military Academy. This act of March 16, 1802, which is the organic law of the corps of engineers and of the Military Academy, provided for the appoint-

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ment of a certain number of officers and cadets,* (not to exceed twenty in all,) and declared that "the principal engineer, or, in his absence, the next in rank, shall have the superintendence of the Military Academy, under the direction of the President of the United States."

It is not my purpose here to follow further the history of that institution; I have alluded to its initiation as a step taken to provide for an acknowledged want of the period—an institution for teaching the military sciences to young men entering the army, and for creating a competent *corps of engineers*. It was soon found, however, that the duties of engineer officers were inconsistent with their remaining at West Point, and themselves constituting "a Military Academy." Most of them were soon called to duties along the seaboard, in constructing our fortifications, while, as the wants of the service and of the Academy have been more clearly seen, the number of cadets has been increased, to supply not only the engineers and artillery, but officers of all arms of the service, and the various professorships and departments of instruction now existing have been established.

As the duties of the corps became more and more extensive, its chief, though charged with the administration of its affairs, could not be constantly present at the Academy, and it ultimately became apparent that the immediate superintendency of such an institution was incompatible with his proper functions. In 1817, an officer selected from the corps (Brevet Major Sylvanus Thayer, to whom allusion has already been made) was appointed permanent superintendent of the Academy, and made subject only to the orders of the President of the United States.

Major (afterwards Colonel) Jonathan Williams, a near relative of Dr. Franklin, whom he accompanied, as secretary, to France, where he studied the military sciences, and made himself acquainted with the standard works on fortification, was the first chief engineer of the United States under the law of 1802. He was an officer of decided merit, much beloved by his subordinates, and is justly styled the father of the corps of engineers and of the Military Academy.

While exercising his superintendence of the Academy, he devoted himself personally to the fortification of New York harbor, and most of the forts which constitute the inner line of defence of that harbor—Fort Columbus, Castles Williams and Clinton, (Castle Garden,) and a work similar to the last named, located two or three miles higher up the river (Fort Gansevoort)—were planned by him, and built under his immediate supervision.

Castle Williams was the first "casemated" battery erected in this country, (built in 1807–10,) and was planned after the system of Montalembert, with which, as we have seen, Colonel Williams had made himself acquainted in France. This and other works of Colonel Williams, though they have been superficially and ignorantly criticised, were really meritorious, and do not suffer by comparison with European structures of the same or even much more recent dates.

The indications of an approaching war with England, and the obvious inadequacy of existing fortifications, had led to renewed exertions, and prompted the works just mentioned and others at all our seaports, so that when the war broke out there was not a town of any magnitude upon the coast not provided with one or more batteries. But most of the works so thrown up before the subject had been studied and systematized as a whole were defective in design, small, weak, and, being built, for present economy, of cheap materials and workmanship, very perishable. In the main, however, they answered their purpose—more, perhaps, through an undue respect for them on the part of our foe than

* Besides ten cadets of engineers, forty cadets "of artillery" were authorized by this law; making fifty cadets in all.

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through their intrinsic strength. It was not till after the close of the war with England that a permanent system of coast defence was entered upon by our government. Indeed, without the experience of that war it is doubtful whether a measure, always so unpopular and generally so little understood as a national system of fortifications, could have gained the support of Congress and of the people. A "board of engineers" was constituted in 1816, with instructions to make examinations of the sea-coast, and to prepare plans for defensive works, subject to the revision of the chief engineer and the sanction of the Secretary of War.

Up to this period the Military Academy had maintained a sort of embryo existence, without definite form or a prescribed system. The annual term of study lasted from April to November, all the intermediate months being vacation. No fixed number of terms was necessary to graduation, nor was it prescribed what should be studied. Some cadets remained but a single term before being commissioned; others, several years. Although this period produced officers who afterwards became highly distinguished in engineering, (as well as in other branches of military art,) it is not surprising that the government yet entertained the common notion that only in Europe, and especially in France, could high military science be found; nor that, in undertaking so vast and costly a work as the fortification of our sea-coast, distrust should have been felt in the unaided abilities of our own engineer officers. A distinguished French engineer, General Simon Bernard, was invited to this country, and, as "assistant" in the corps of engineers, (an office created for the purpose by Congress,) made a member of the board which, as first constituted, November 16, 1816, consisted of himself as president, Colonel William McRee, and Lieutenant Colonel J. G. Totten. In 1817 Colonel Totten was relieved, and appears to have been stationed at Rouse's Point, Lake Champlain, in charge of fortifications at that place, and the board to have been composed of Brigadier General J. G. Swift, Chief Engineer, Brigadier General Bernard, and Colonel McRee; but Colonel Totten was again made a member in 1819, and (both General Swift and Colonel McRee having resigned) the permanent board came to consist of Bernard and Totten alone, and the labor of working out the fundamental principles of the system, and of elaborating the projects of defence for the great seaports, thus devolved mainly upon these two officers, though naval officers of rank and experience were associated with them whenever their examinations included positions for dock-yards, naval depots, or other objects which concerned the naval service.

Though the advent of a foreign officer, and his assignment to this duty, under the anomalous designation of "assistant" in the corps of engineers, naturally caused some feeling, yet it can scarcely be doubted that the influence of the proceeding was beneficial. If in Swift, McRee, Totten, Thayer, and many others, were found high engineering abilities and acquirements, it is no less true that professional association with such a man as Bernard was calculated to stimulate to higher attainments and more zealous exertion. The spirit of emulation alone would induce our own officers to prove to the country that they were not inferior to others. To high military and scientific acquirements and great experience in his professional duties, General Bernard united to the qualities of an amiable and accomplished gentleman the tact to adapt himself to his peculiar position without wounding the pride of those with whom he was thus associated. The prestige of his name aided powerfully in sustaining, with the administration and with Congress, the measures which the board found necessary to recommend, and in establishing firmly, as a part of our national policy, the system of sea-coast defence by fortifications. In recounting the origin and growth of the system, it is but just to give that name an honorable mention.

By the board of engineers of which I have been speaking a series of reports was drawn up, which, mostly from the pen of our departed associate, form his

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best memorial, and exhibit in a masterly manner the principles of sea-coast and harbor defence, and their application to our own country. In a paper of this kind it will not be out of place to give some idea, at least, of the arguments and views contained in these documents. An elaborate report of 1826, from which I quote, gives a general *résumé* of the principles which have guided the labors of the board, and of the results arrived at:

"The means of defence for the seaboard of the United States, constituting a system, may be classed as follows: First, a navy; second, fortifications; third, interior communications by land and water; and fourth, a regular army and well-organized militia.

"*The navy* must be provided with suitable establishments for construction and repair, stations, harbors of rendezvous, and ports of refuge, all secured by fortifications defended by regular troops and militia, and supplied with men and materials by the lines of intercommunication. Being the only species of offensive force compatible with our domestic institutions, it will then be prepared to act the great part which its early achievements have promised, and to which its high destiny will lead.

"*Fortifications* must close all important harbors against an enemy, and secure them to our military and commercial marine; second, must deprive an enemy of all strong positions where, protected by naval superiority, he might fix permanent quarters in our territory, maintain himself during the war, and keep the whole frontier in perpetual alarm; third, must cover the great cities from attack; fourth, must prevent as far as practicable the great avenues of interior navigation from being blockaded at their entrances into the ocean; fifth, must cover the coastwise and interior navigation by closing the harbors and the several inlets from the sea which intersect the lines of communication, and thereby further aid the navy in protecting the navigation of the country; and sixth, must protect the great naval establishments.

"*Interior communications* will conduct with certainty the necessary supplies of all sorts to the stations, harbors of refuge, and rendezvous, and the establishments for construction and repair, for the use both of the fortifications and the navy; will greatly facilitate and expedite the concentration of military force and the transfer of troops from one point to another; insure to these also unfailing supplies of every description, and will preserve unimpaired the interchange of domestic commerce even during periods of the most active external warfare.

"*The army and militia*, together with the marine, constitute the vital principle of the system.

"From this sketch it is apparent that our system of defence is composed of elements whose numerous reciprocal relations with each other and with the whole constitute its excellence; one element is scarcely more dependent than the whole system is on any one. Withdraw the navy, and the defence becomes merely passive; withdraw interior communications from the system, and the navy must cease in a measure to be active for want of supplies, and the fortifications can offer but a feeble resistance for want of timely re-enforcements; withdraw fortifications, and there only remains a scattered and naked navy."

The relation of the navy to fortifications is one of those subjects not always well appreciated, and hence the cause of mischievous notions and much misrepresentation. No pains is spared in these reports to make this subject clearly understood. After the quotation just given, Colonel Totten remarks:

"It is necessary to observe, in the first place, that the relation of fortifications to the navy in a defensive system is that of a sheltering, succoring power, while the relation of the latter to the former is that of an active and powerful auxiliary; and that the latter ceases to be efficient as a member of the system the moment it becomes passive, and should in no case (we allude to the navy proper) be relied on as a substitute for fortifications. This position may be easily established.

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"If our navy be inferior to that of the enemy, it can afford, of course, unaided by fortifications, but a feeble resistance, single ships being assailed by whole fleets; if it be equal, or superior, having numerous points along an extended frontier to protect, and being unable to concentrate, because ignorant of the selected point of attack, every point must be simultaneously guarded: our separate squadrons may therefore be captured in detail by the concentrated fleet of the attacking power. If we attempt to concentrate under an idea that a favorite object of the enemy is foreseen, he will not fail to push his forces upon the places thus left without protection. This mode of defence is liable to the further objections of being exposed to fatal disasters, although not engaged with an enemy, and of leaving the issue of conflict often to be determined by accident, in spite of all the efforts of courage and skill. If it were attempted to improve upon this mode by adding temporary batteries and field works, it would be found that, besides being weak and inadequate from their nature, the most suitable positions for these works must often be neglected, under a necessary condition of the plan, that the ships themselves be defended; otherwise, they must either take no part in the contest, or be destroyed by the superior adversary."

It is hardly to be expected that a system affording so much room for discussion, and by its importance inviting it, should, especially in this country, escape adverse judgment. Military and naval men, congressmen, and even cabinet officers, have assailed it, called in question the principles on which it is based, or denied the judiciousness of their application. The forms and sources of assault have been varied, but there has been really no great difference in the substance, of which, perhaps, as good an expression as any may be found in these dogmas, forming the pith of a criticism from no less a source than the Secretary of War, Mr. Cass, approved by the President, General Jackson:

"1st. That for the defence of the coast, the chief reliance should be on the navy;

"2d. That in preference to fortifications, floating batteries should be introduced wherever they can be used;

"3d. That we are not in danger of large expeditions; and, consequently,

"4th. That the system of the board of engineers comprises works which are unnecessarily large for the purposes which they have to fulfil."

Owing to these strictures, the House of Representatives, by resolutions of April 9, 1840, called upon the War Department for a report of a full and connected system of national defence. The duty was committed by the Secretary of War to a board of officers of the army and navy, among whom was Colonel Totten, and by whom the report was drawn up. It was entirely approved by the Secretary of War, Mr. Poinsett, and is universally admitted to be one of the most able and comprehensive expositions of the whole subject of sea-coast defence extant, and a complete refutation of the objections made to our existing system. The discussion of the first and principal proposition—that of defence by the navy—is so interesting and instructive that, though long, I venture to quote it:

"The opinion that the navy is the true defence of the country is so acceptable and popular, and is sustained by such high authority, that it demands a careful examination.

"Before going into this examination, we will premise that by the term 'navy' is here meant, we suppose, line-of-battle ships, frigates, smaller sailing vessels, and armed steamships, omitting vessels constructed for local uses merely, such as floating batteries.

"For the purpose of first considering this proposition in its simplest terms, we will begin by supposing the nation to possess but a single seaport, and that this is to be defended by a fleet alone.

"By remaining constantly within this port, our fleet would be certain of meeting the enemy, should he assail it. But if inferior to the enemy, there would

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be no reason to look for a successful defence; and as there would be no escape for the defeated vessels, the presence of the fleet, instead of averting the issue, would only render it the more calamitous.

"Should our fleet be equal to the enemy's, the defence might be complete, and it probably would be so. Still, hazard, some of the many mishaps liable to attend contests of this nature, might decide against us; and in that event, the consequences would be even more disastrous than on the preceding supposition. In this case the chances of victory to the two parties would be equal, but the consequences very unequal. It might be the enemy's fate to lose his whole fleet, but he could lose nothing more; while we in a similar attempt would lose not only the whole fleet, but also the object that the fleet was designed to protect.

"If superior to the enemy, the defence of the port would in all respects be complete. But instead of making an attack, the enemy would, in such case, employ himself in cutting up our commerce on the ocean; and nothing could be done to protect this commerce without leaving the port in a condition to be successfully assailed.

"In either of the above cases the fleet might await the enemy in front of the harbor, instead of lying within. But no advantage is apparent from such arrangement, and there would be superadded the risk of being injured by tempests, and thereby being disqualified for the duty of defence, or of being driven off the coast by gales of wind, thus for a time removing all opposition.

"In the same cases also, especially when equal or superior to the enemy, our fleet, depending on having correct and timely notice as to the position and state of preparation of the enemy's forces, might think proper to meet him at the outlet of his own port, or intercept him on his way, instead of awaiting him within or off our own harbor. Here it must be noticed that the enemy, like ourselves, is supposed to possess a single harbor only; but, having protected it by other means, that his navy is disposable for offensive operations. If it were attempted thus to shut him within his own port, he, in any case but that of decided inferiority, would not hesitate to come out and risk a battle; because, if defeated, he could retire under shelter of his defences to refit; and if successful, he could proceed with a small portion of his force—even a single vessel would suffice—to the capture of our port now defenceless, while, with the remainder, he would follow up his advantage over our defeated vessels, not failing to pursue into their harbor should they return thither.

"Actual superiority on our part would keep the enemy from volunteering a battle; but it would be indispensable that the superiority be steadily maintained, and that the superior fleet be constantly present. If driven off by tempests, or absent from any other cause, the blockaded fleet would escape, when it would be necessary for our fleet to fly back to the defence of its own port. Experience abundantly proves, moreover, that it is in vain to attempt to shut a hostile squadron in port for any length of time. It seems, then, that whether we defend by remaining at home, or by shutting the enemy's fleet within his own harbor, actual superiority in vessels is indispensable to the security of our own port.

"With this superiority the defence will be complete, provided our fleet remains within its harbor. But then all the commerce of the country upon the ocean must be left to its fate; and no attempt can be made to react offensively against the foe, unless we can control the chances of finding the enemy's fleet within his port, and the still more uncertain chance of keeping him there; the escape of a single vessel being sufficient to cause the loss of our harbor. Let us next see what will be the state of the question on the supposition of numerous important ports on either side, instead of a single one, relying on our part still exclusively on a navy.

"In order to examine this question, we will suppose our adversary to be fortified in all his harbors, and possessed of available naval means, equal to our

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own. This is certainly a fair supposition; because what is assumed as regards his harbors is true of all maritime nations, except the United States; and as regards naval means, it is elevating our own strength considerably above its present measure, and above that it is likely to attain for years.

"Being thus relatively situated, the first difference that strikes us is, that the enemy, believing all his ports to be safe without the presence of his vessels, sets himself at once about making our seas and shores the theatre of operations, while we are left without choice in the matter; for if he thinks proper to come, and we are not present, he attains his object without resistance.

"The next difference is, that while the enemy (saving only the opposition of Providence) is certain to fall upon the single point, or the many points he may have selected, there will exist no previous indications of his particular choice, and, consequently, no reason for preparing our defence on one point rather than another; so that the chances of not being present and ready on his arrival are directly in proportion to the number of our ports—that is to say, the greater the number of ports, the greater the number of chances that he will meet no opposition whatever.

"Another difference is, that the enemy can choose the mode of warfare as well as the plan of operations, leaving as little option to us in the one case as in the other. It will be necessary for us to act, in the first instance, on the supposition that an assault will be made with his entire fleet; because, should we act otherwise, his coming in that array would involve both fleet and coast in inevitable defeat and ruin. Being in this state of concentration, then, should the enemy have any apprehensions about the result of a general engagement, should he be unwilling to put anything at hazard, or should he, for any other reason, prefer acting by detachments, he can, on approaching the coast, disperse his force into small squadrons and single ships, and make simultaneous attacks on numerous points. These enterprises would be speedily consummated, because, as the single point occupied by our fleet would be avoided, all the detachments would be unopposed; and after a few hours devoted to burning shipping, or public establishments, and taking in spoil, the several expeditions would leave the coast for some convenient rendezvous, whence they might return, either in fleet or in detachments, to visit other portions with the scourge.

"Is it insisted that our fleet might, notwithstanding, be so arranged as to meet these enterprises?

"As it cannot be denied that the enemy may select his point of attack out of the whole extent of coast, where is the prescience that can indicate the spot? And if it cannot be foretold, how is that ubiquity to be imparted that shall always place our fleet in the path of the advancing foe? Suppose we attempt to cover the coast by cruising in front of it, shall we sweep its whole length?—a distance scarcely less than that which the enemy must traverse in passing from his coast to ours. Must the Gulf of Mexico be swept as well as the Atlantic; or shall we give up the Gulf to the enemy? Shall we cover the southern cities, or give them up also? We must unquestionably do one of two things: either relinquish a great extent of coast, confining our cruisers to a small portion only, or include so much that the chances of intercepting an enemy would seem to be out of the question."

The report then goes on to discuss the uses for defensive purposes of gunboats, floating batteries and steam batteries, as distinguished from the navy proper. Admitting their usefulness, and, even in some cases, their necessity, it argues with great force that they are not a substitute for and cannot supersede fortifications, and it sums up its argument concerning naval defence with the following broad propositions, to which it challenges opposition:

"1st. If the sea-coast is to be defended by naval means exclusively, the defensive force at each point deemed worthy of protection must be at least equal in *power* to the attacking force.

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"2d. As from the nature of the case there can be no reason for expecting an attack on one of these points rather than on another, and no time for transferring our state of preparation from one to another after an attack has been declared, each of them must have assigned to it the requisite means; and,

"3d. Consequently this system demands a power in the defence as many times greater than that in the attack as there are points to be covered.

"There has been but one practice among nations as to the defence of ports and harbors, and that has been a resort to fortifications. All the experience that history exhibits is on one side only; it is the opposition of forts or other works, comprehended by the term fortification, to attack by vessels, and although history affords some instances wherein this defence has not availed, we see that the resort is still the same. No nation omits covering the exposed points upon her seaboard with fortifications, nor hesitates in confiding in them."

The most prominent cases of such successful attacks, viz. Copenhagen, Algiers, San Juan de Ulloa, &c., are then described and discussed, to show that the deductions drawn from them are erroneous, or that they are not cases in point, or that the disastrous result has been owing to the neglected condition, imperfect armament, or unskilful and inadequate defence of the forts.

The report, of which I have given some of the main points, may be said to have silenced opposition to our system of fortifications for the next ten years; but, in a form modified by the alleged changes in the condition of the country, increase of population, construction of railroads, &c., it again found expression in a resolution of Congress in 1851; and the Secretary of War, to enable himself to respond, called upon numerous distinguished army and navy officers for an expression of their opinions. The following questions were addressed to several of the principal engineer officers, among whom the chief of corps, General Totten:

"1st. How far the invention and extension of railroads have superseded or diminished the necessity of fortifications on the seaboard?

"2d. In what manner and to what extent the navigation of the ocean by steam, and particularly the application of steam to vessels of war, and recent improvements in artillery, and other military inventions and discoveries, affect this question?

"3d. How far vessels of war, steam batteries, ordinary merchant ships and steamers, and other temporary expedients, can be relied upon as a substitute for permanent fortifications for the defence of our seaports?

"4th. How far the increase of population on the northern frontier and of the mercantile marine on the northern lakes obviates or diminishes the necessity of continuing the system of fortifications on these lakes?"

General Totten's response to these critical interrogations is, as usual with him when this great subject has to be dealt with, full and exhaustive. The following pithy paragraphs exhibit his views on the influence of railroads:

"Suppose a hostile fleet to lie in front of the city of New York—which nothing would prevent, if the channels of approach were not fortified—in what way could the 100,000 or 200,000 new men poured into the city and environs by railroads, although armed with muskets and field-pieces, aid the half-million of people already there? It seems to me very clear that these additional forces would, like the population of the city, be utterly powerless in the way of resistance, with any means at their command, and, if resistance were attempted by the city, would but serve to swell the list of casualties, unless they should at once retreat beyond the range of fire. If the enemy's expedition were intended, according to the second supposed mode of attack, for invasion, or occupation for some time, of a portion of the country, then in many places this resource of railroads would be of value, because then the duty of defence would fall upon the army and militia of the country, and these communications would swell their numbers.

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"But of all circumstances of danger to the coast, this chance of an attempt by an enemy to land and march any distance into a populous district is least to be regarded, whether there be or be not such speedy mode of receiving re-enforcements, and our system of fortifications has little to do with any such danger. In preparing against maritime assaults, the security of the points to be covered is considered to be greatly augmented whenever the defence can be so arranged as to oblige an enemy to land at some distance; for the reason that opportunity is thereby allowed, in the only possible way, for the spirit and enterprise of the people to come into play.

"Instead of being designed to prevent a landing upon any part of the coast, as many seem to suppose, and some allege in proof of extravagant views on the part of the system of defence, the system often leaves this landing as an open alternative to the enemy, and aims so to cover the really important and dangerous points as to necessitate a distant landing and a march towards the object through the people. It is because the expedition would easily accomplish its object without landing, and without allowing the population to partake in the defence, that the fortifications are resorted to. For instance, without Fort Delaware, or some other fort low down on Delaware bay, an enemy could place his fleet of steamers in front of Philadelphia by the time his appearance on the coast had been well announced throughout the city. And in spite of all New Jersey, Delaware, and lower Pennsylvania, he could levy his contributions, and burn the navy yard and shipping, and be away, in a few hours. But being obliged, by the fort above mentioned, to land full forty miles below the city, the resistance to his march may be safely left to the courage and patriotism that will find ample time to array themselves in opposition."

Concerning the application of steam to vessels of war he says:

"The application of steam to vessels of war acts upon the question of sea-coast defence both beneficially and injuriously. It acts injuriously in several ways; but chiefly, first, by the suddenness and surprise with which vessels may fall upon their object, and pass from one object to another, in spite of distance, climate, and season; and, secondly, by their ability to navigate shallow waters.

"The first property, by which squadrons may run into our harbors, outstripping all warnings of their approach, affords no chance for impromptu preparations; accordingly, whatever our preparations are to be, they should precede the war. If seems past all belief that a nation having in commission—as France and England always have—a large number of war-steamers, ready for distant service in twenty-four hours, receiving their orders by telegraph, capable of uniting in squadrons, and in two or three days at most speeding on their several paths to fall upon undefended ports—it is not to be expected, I say, that they should delay such enterprises until temporary resorts could be got ready to receive them. And yet there are those who insist that we should leave defensive measures to a state of war—that we should let the day supply the need!

"Inadequate as all such measures must prove, there would not be time to arrange even these. By the second property, due to their light draught of water, these vessels will oblige the defence to be extended in some form to passages or channels or shoals that were before adequately guarded by their shallowness. The bars at the mouth of the Mississippi formerly excluded all but small vessels-of-war, and the strong current of the river made the ascent of sailing vessels exceedingly uncertain and tedious. Now these bars and currents are impediments no longer; and all the armed steamers of Great Britain and France might be formed in array in face of the city of New Orleans before a rumor of their approach had been heard.

"Had the English expedition of 1814, attended by a squadron of armed steamers, arrived at the mouth of the Mississippi, a few transports might have been taken in tow, and in a few hours the whole army would have been before

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the city. Or twelve or fifteen such steamers could have carried the whole army up in half a day, without the delay of transports. Will it be contended that the attack in that form would have been repulsed with the means then in General Jackson's hands? Would the landing, or even the presence on board these steamships, of the British troops have been necessary to burn the city or put it under contribution? Is there anything now, but the existence of forts on the river, to prevent the success of such an attack by fifteen or twenty steamers of war, allured there by the vastly increased magnitude of the spoil?"*

While the enemy's means of attack are thus enhanced by the use of war steamers, General Totten contends that they cannot be relied upon, as a substitute for fortifications, for defence.

"I do not assert," he says, "that armed vessels would not be useful in coast defence. Such an idea would be absurd. I shall even have occasion to show a necessity for this kind of force, in certain exceptional cases. It is the general proposition, viz., that armed vessels, and not fortifications, are the proper defences for our vulnerable points—a proposition the more dangerous, because seemingly in such accordance with the well-tried prowess and heroic achievements of the navy, that we have now to controvert.

"Boston, New York, Philadelphia, Baltimore, Charleston, and New Orleans are, we will suppose, to be guarded, not by forts, but by these vessels, on the occurrence of a war with a nation possessing large naval means. We know that it is no effort for such nations to despatch a fleet of twenty line-of-battle ships and frigates, or an equal number of war steamers, or even the combined mass—both fleets in one.

* * * * * * * *

"What, then, shall we do at the above-named ports severally? Each is justly felt to be an object worthy of an enemy's efforts, and each would be culpable in sending elsewhere any part of the force required for its own defence. Each, therefore, maintains a naval force equal, at least, to that the enemy is judged to be able to send promptly against it. Omitting any provision for other places scarcely less important, what is the result? It is, that we maintain within the harbors of, or at the entrance to, these places, chained down to this passive defence, a force at least six times as large as that of the enemy.

"He does not hesitate to leave his port, because it will be protected in his absence by its fortifications, which also afford him a sure refuge on his return. He sails about the ocean, depredating upon our commerce with his privateers and small cruisers, putting our small places to ransom, and in other ways following up appropriate duties; all which is accomplished without risk, because our fleet, although of enormous magnitude, must cling to ports which have no other defence than that afforded by their presence. They cannot combine against him singly, for they cannot know where he is; and must not, moreover, abandon the object which they were expressly provided to guard.

"It would really seem that there could not be a more impolitic, inefficient, and dangerous system, as there could not certainly be a more expensive one."

I have thus extensively quoted from the reports of General Totten, because they are themselves the best expressions of the life labors and services of the subject of our memoir, and because I think they treat of matters which should be, in an eminent degree, interesting to the members of this National Academy, and which, moreover, should demand its attention.

To preserve the continuity of my subject, I have followed these reports down to a late date. It is necessary now to revert to an earlier period. It has

* The experience of the rebellion has proved the truth of General Totten's words. The moment the *forts* were passed, the city of New Orleans was, notwithstanding the land forces under Lovell, at Commodore Farragut's mercy. I have alluded elsewhere to the failure of the forts.

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already been observed that, as soon as the original board of engineers had sufficiently matured the general system of defence, and completed plans for the works first required, its members applied themselves to the duty of construction. In 1828 General (then Colonel) Totten took charge of the construction of Fort Adams, Newport harbor, and continued on this duty, making his residence in the town of Newport, until December, 1838, the date of his appointment as chief of the corps of engineers. This work, the second in magnitude of the fortifications of the United States, is one of the best monuments of his genius as a military engineer. From its peculiar relations to the land defence, it called for the application of most of those rules of the art and many of those special arrangements which form the themes of treatises upon "fortification," and which, generally, have but a very limited application to works of harbor defence. In these respects it has no parallel with us; and in the treatment of the case and happy adaptation of means to the end, Colonel Totten exhibited a mastery of all the details of the art, which proves his technical skill and minute knowledge to be fully equal to the power of broad generalization I have already endeavored to illustrate. But Colonel Totten found here yet another field for professional usefulness—another track to explore. The art of the civil engineer (I use the phrase in its application to mere *construction*, whether it be of a military or civil work) was yet in its infancy in this country. Our resources in building materials were almost unknown, their qualities and adaptabilities to different purposes of construction undeveloped. Thus far the matter had excited little attention; the building material, whether brick or stone, lime or timber, nearest at hand was indiscriminately used, and its aggregation left much to the skill of the mechanic. In commencing constructions on so great a scale, it was of the first importance that the work should be both durable and economical—a result only to be attained by the most careful selection of materials, and the most skilful manipulation. Besides, our forts called for arrangements unknown in other branches of building—arrangements for which the execution and the most suitable materials had to be studied out *ab initio*, since on many of these points there were neither experience nor extant rules to guide.

In the years 1830 and 1831 a series of experiments was instituted by Colonel Totten at Fort Adams, on the expansion and contraction of building stone by natural changes of temperature, and the effects of these variations on the cements employed to secure the joints of stone copings. An account of them was prepared under his direction by Lieutenant (now Professor) W. H. C. Bartlett, a member of this Academy, and published in the American Journal of Science for July, 1832. The methods employed were at once simple and ingenious, and the result was such as to leave no doubt that in this climate the joints of copings formed of stone of four or five feet in length will always be insecure, no matter what description of cement may be employed to close them.

This result is one of great practical importance. Previously to the experimental examination of the subject by Colonel Totten, the walls of our most expensive works of masonry were protected by copings cemented at their joints; and while the failure of the cement was constantly noticed, the cause of the failure was not understood. The experiments showed that the changes of longitudinal dimensions of granite coping-stones, five feet only in length, under the extreme temperatures to which they were exposed at Newport, would be sufficient to pulverize the hardest cement between them, or to leave cracks in it thicker than common pasteboard. With marble as a material, these destructive effects are considerably increased, and with sandstone, nearly doubled.

About the same time Colonel Totten caused some experiments to be made to ascertain the relative stiffness and strength of the following kinds of timber, viz: White pine, *(Pinus strobus,)* Spruce, *(Abies nigra,)* and southern pine, *(Pinus australus)*, also called long-leaved pine.

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These experiments, made by his assistant, Lieutenant T. S. Brown, of the corps of engineers, were published in the American Journal of Science and Art, and afterwards, having been revised by the author, in the Journal of the Franklin Institute, a note being added, the calculations extended, and practical inferences drawn therefrom. This memoir and additions are found in vol. vii, new series, Journal of the Franklin Institute, 1831. Lieutenant Brown's account concludes with the following remarks:

"In Tredgold's Carpentry, and other similar works, may be found the constant numbers (a) and (c) for nearly all the kinds of wood useful in the arts; but besides that the numbers are in many instances calculated from insufficient experiments, most of the specimens used in the trials were of European growth, and of course the results obtained are inapplicable to American timber, though bearing the same name. It is much to be desired that numerous and accurate experiments be made in this country by those having the requisite zeal and opportunities; our architects will then know with certainty the qualities of the different kinds of woods they are using, and instead of working at hazard and in the dark, as they now too often do, they will be guided by the sure light of practical science to certain and definite results. If these experiments contribute ever so little to the attainment of so important a result, the object of their publication will be fully accomplished."

A subject of such vital importance in the art of construction as the composition of mortars could not fail to invite, or rather compel, the researches of Colonel Totten. No species of masonry is subject to such severe deteriorating influences as the walls and arches of fortifications, especially in our climate; so severe, indeed, that they almost drive the engineer to despair. Next only to the importance of having the building stones or bricks of a suitable character, is that of uniting them by a strong and durable mortar. Few persons whose attention has not been called to the subject conceive its magnitude, the variety of materials it embraces, and the laborious investigations to which it has given rise. Colonel Totten commenced his researches at an early date, and continued them actively during the whole period of his connexion with Fort Adams.

His work on "Hydraulic and Common Mortars" was published in 1838 by the Franklin Institute of Philadelphia. It contains, besides original experiments and observations on mortars, hydraulic cements and concretes, translations of essays by Treussart, Pitot, and Courtois, the best French writers on the same subject, and constitutes to this day an authority relied on by American engineers. Colonel Totten's experiments extend over the period from 1825 to 1838; they are especially valuable for the variety of limes and cements, and the tests of different modes of slacking the lime, mixing the mortars, and preparing the cements and concretes. The mortars were tested, after periods ranging from five months to four years and five months, for tenacity, by the force required to separate two bricks joined together by means of them, and for hardness by the weight which they would support, applied over a small circular area. The experiments on concretes or factitious stones are equally comprehensive, being directed to the composition and consistency of the cement, whether best used as a stiff mortar or a semi-fluid grout; to the effect of additions of common lime and sand or rounded pebbles and gravel, and to ascertaining the proportion of each that would be used to the best advantage. The results developed by these investigations are of the greatest value, and having been applied in the construction of the fort, have now had the test of many year's experience.

It would be almost impossible to enumerate the various objects of Colonel Totten's researches while at Newport. There is scarce a subject connected with the art or science of the engineer, civil or military, which did not engage

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his attention, and of which he has not left some record. The thickness of sustaining walls, the thrust of arches, among the more important, and the composition of stuccoes, of paints, lackers, washes for stone or brick work, among the less so, may here be mentioned.

Perhaps no period of his life is so interesting and so affectionately remembered by his professional associates. Indeed, a large proportion of the young officers of the corps of those days passed a portion of their time under his command, and acquired their first professional experience in the performance of duties under his eye and direction. The disposition to cultivate science, physical and natural, led him to original researches, while his influence stimulated and led to improvement the educated young men who from time to time came into his military family. Fond of exercise, bodily and mental, he sought in natural history, as in geology, mineralogy, and conchology, objects for the long walks and drives conducive to health, while the arrangement of the specimens, their care and classification, and the study of the habits of the animals which occupied the shells, gave scope to his wonderful powers of observation. Instead of finding his young officers a trouble, he was fond of their companionship, suggesting modes and objects of experiment, and encouraging them to do so likewise, thus cultivating originality of thought. His laboratory was at their service, and his companionship and example at their disposal. After a day's labor he retired to this laboratory, glad to have with him such of the young companions of the day as desired to join him. The honored president of this Academy can recollect, year after year, the computations, under Colonel Totten's direction, of the thickness of revetments, the analysis of minerals collected in the field, classifications of shells gathered in days' walks on the seashore, discussions of the curious structure of geological specimens in the neighborhood of Newport, and of the curious mineralogical specimens of the upper portion of Rhode Island, which he encouraged them to find. So upon the fort itself, the various researches which I have described were marked out for successive experimenting, with a generosity to his assistants which almost persuaded them that they were original with them. The determination of the measures used in laying out the fort, and the practical apparatus employed in the measurements, received his careful study. The practical character of these works impressed themselves upon the minds of the young officers, and furnished the fitting complement to the theoretical training received at West Point.

Not least pleasant among the memories of this period of Colonel Totten's life, to those who had the good fortune to be associated with him, is the recollection of the social enjoyments of his house. Married in 1816 to Catlynn Pearson, of Albany, he was surrounded by a young family, among whom his happiest moments were spent, and to whom he was everything that such a relation can imply. None could be happier in his social intercourse. Genial and eminently hospitable, he cultivated as a duty those smaller amenities of society by which the cares of life are lightened and its joys augmented. His house was the home of his friends, and was seldom without some one of them. Though dignified and courteously reserved in his intercourse with the external world, few more highly enjoyed real humor, or could with more true *bonhommie* give themselves up to the gayety of the moment. In his relations to his young officers he was kind and affable, encouraging freedom of expression, and inviting inquiry in everything that related to professional matters, while there was always that in his manner which inspired the most profound respect and forbade undue levity of conduct in his presence.

Before quitting the scene of so important a portion of Colonel Totten's official labors, it is proper to remark that, in addition to the duties of his particular charge, he, as a member and for the last six years president of the board of engineers, was engaged in the planning of the new works for which Congress

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from time to time made the necessary appropriations.* To this duty he usually devoted the winter months, during which all construction on Fort Adams was suspended. In the execution of his designs he was usually assisted by young officers of the corps, who found therein a practical application of the theoretical knowledge acquired at West Point instructive and useful.

The works of harbor improvement on the seaboard and on the lakes were likewise under the control and direction of the Engineer Bureau; and Colonel Totten, though not directly engaged therein, was not infrequently called on to inspect and advise concerning them. Most of these, and especially those of the lake shores, afforded curious and interesting problems in this branch of civil engineering, and his reports and notes on these subjects, yet extant, are additional proofs of the wide range of his professional knowledge and of his powers of accurate observation and of skilful deduction from the phenomena of nature.

Colonel Totten was appointed colonel of the corps of engineers and Chief Engineer December 7, 1838. At this time the construction of Fort Adams was so far advanced towards completion as to need no longer his personal supervision, and the city of Washington became thenceforth his home and the seat of his official duties. Identified, as we have seen, with the origin and growth of the great system of sea-coast defence of the United States, it was eminently proper that he should become the head of that bureau of the War Department to which its execution was committed, and no one could be more eminently fitted for that important station.

At the date of his appointment the system of coast defence had been for about twenty years in progress of construction, and during that period most of those ports and harbors of the United States deemed most important to ourselves or most assailable by a naval foe had been, at least, partially fortified. At many such points, indeed, no new work had been as yet constructed, owing to the existence of forts or batteries more or less adequate built before or during the war of 1812. These works, where possible, were absorbed into the new system with some repairs and alterations. Among such points may be mentioned the harbors of Portland, Portsmouth, New London, Philadelphia, Baltimore, and Charleston. New and powerful works had, however, been built or far advanced to completion, for the defence of Boston, Newport, New York, Hampton Roads, the Savannah river, Pensacola, Mobile, and New Orleans. But the strictures on the system, to which we have before made reference, proceeding from such an authority as the Secretary of War and sanctioned by the President, had not failed to shake the confidence of Congress and of the people. For several years the annual appropriations had been wholly denied or made so inadequately that the work had languished and at some points had been wholly suspended. But however much opposition may grow up in time of profound peace, no sooner is there a probability of seeing a foe at our doors than all eyes are turned to these protecting works, and the most urgent demands are made that our seaport towns shall be speedily put "in a state of defence." Such an impulse was given by the Maine bonndary and McLeod questions, soon after the advent of Colonel Totten to the Chief Engineership. In fulfilling the urgent duty which thus devolved upon him, he did not content himself with the mere issuing of orders from his office at Washington. He made it his business to inspect personally the works, and in less than two years, besides

* By the Regulations, the local engineer officer, upon whom the construction of the proposed work was to devolve, was *ex officio* a member of the board. This brought together during the winter months engineer officers from various parts of the country—from the shores of the Gulf, from the seaboard of North and South Carolina and Georgia, as well as from nearer points, and added not a little to the charm of the professional and social life of the young engineer officers at Newport.

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the enormous office labor he found necessary to attend to on the first assumption of charge of the bureau, he had visited every fort and battery on the seacoast of the United States. His inspections were not superficial and hasty; they were most thorough and searching. His investigations embraced, at the same time, the general scope and purpose of the work, its adaptability to its great objects, and the minutest detail in its construction. It was now that the country derived the full benefit of his indefatigable researches while at Newport.

I have already alluded to the lack of knowledge and experience in this country of the art of construction, especially in its applications to the peculiarities of fortification. To supply this lack was a great end of Colonel Totten's labors at Fort Adams. At few other points did the locality or circumstances of the construction render practicable such researches. This remark will apply particularly to the works on the Gulf of Mexico. The regions bordering the Gulf were, at the close of the war of 1812, but recent acquisitions to the territory of the United States. Sparsely populated and isolated from the rest of the Union as (before the application of steam to the navigation of the Mississippi) they were, they would be defended, if defended at all, only by the aid of fortifications. The fact that New Orleans had been almost wrenched from our grasp, and the impression then everywhere felt that if it had been captured it would not have been relinquished, stimulated the government to secure the possession of this important place and of other strategic points on the Gulf by immediate fortification. Accordingly, designs for works—mostly prepared by General Bernard—were among the first labors of the board of engineers, and the forts on the river and lake approaches to New Orleans, at the entrances to Mobile bay and Pensacola harbor, were almost simultaneously commenced. Around New Orleans especially the engineers had to contend with formidable difficulties. The deadly climate, the treacherous soil, on which no art could build a structure so massive as a fortification that should not sink one or more feet, warping and dislocating the walls and arches, the difficulties of procuring the services of mechanics and laborers, the want of building materials, &c., all combined to make construction exceedingly difficult, to forbid any of its niceties, and to hinder all research or experiment. Some of these works had been entirely finished at the period we have arrived at, others nearly so, and left to "settle" before the weight of the earthen parapets was added.

Considering all these unfavorable circumstances, these works had been built in a manner creditable to the energy and skill of the engineers; but a few years' neglect, aided by a damp and tropical climate, had given many of them an appearance which, to the superficial observer, promised anything but efficiency. Indeed, it was a popular belief in New Orleans at this time that Fort Jackson, on the Mississippi, had sunk so much that its guns could not be brought to bear on the river—a belief doubtless due to the unnecessarily highness of the levees by which it had been surrounded to protect its site from inundation, and to the rapid growth of vegetation on and about the fort. Such was the condition of this work when Colonel Totten first visited it in 1841, and the author of this paper, who had but recently taken charge of it, has yet a vivid recollection of the thorough inspections of this and other works, the tedious voyages in open boats through the intricate "bayou" navigation about New Orleans, in company with his chief, as well as the copious and most minute instructions which he received. Destitute of American experience on such points, the designer had followed European precedents, or the constructing engineer had been left to his own devices as to much that relates to the interior arrangements. The wood-work of magazines, inadequately ventilated, had rotted and fallen in ruins; the covering of the bomb-proof casemates, imperfectly understood, had failed to exclude water, which percolated through the piers and arches, or gathered in muddy pools on the floors. The work to be done to bring the forts

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to speedy efficiency was vast; embrasures and floors of casemates were to be raised to compensate the settlement the work had undergone; earth to be removed from the arches, in order to repair or renew the roofing; magazines and quarters to be refitted, and all this before a gun could be mounted in a proper manner. On all these points Colonel Totten was rich in the experience of his long researches, and ready at once to give the proper directions. Following his detailed instructions, the works speedily reached such a condition of efficiency as to permit the mounting and service of their guns.*

What the writer here relates from his own experience at New Orleans serves but to illustrate the indefatigable labors and personal agency of Colonel Totten at this period, along the whole seaboard of the United States, in bringing all its ports and harbors into a defensible condition. Nor should I confine these attributes to any particular period. During the whole time of his chief engineership he continued the same laborious supervision. Generally once in about every two years he inspected every fort of the United States, and scarcely was the local engineer officer more thoroughly familiar with each detail of his own particular works than was the Chief Engineer with those of all under charge of the Engineer bureau. Besides attending to the routine duties of his office at Washington, he found time to design plans for new works, as well as for alterations or enlargement of old ones. An admirable draughtsman, executing his work with a delicacy and finish that defied competition on the part of his subordinates, he would be usually found, if visited at his office, engaged at his drawing-table. Indeed, if he had a fault as Chief Engineer, it was the habit of doing everything himself. It was contemplated by the Regulations lations that all plans of fortifications should be made by a board of engineers, and General Totten, in one of his reports, alludes to the fact that this has *not* always been the case, in these words: "In rare cases it has happened that plans have been made under the particular direction of the Chief Engineer, owing to the difficulty, at moments, of drawing the widely dispersed members of the board from their individual trusts." It may be said, too, in justice to him, that when he assumed control of the bureau, it was almost indispensable to take much upon himself, in the direction of the repairs and prosecution of many of the works, owing to the great pressure thrown upon the corps by the circumstances of the period, and the want of a sufficient number of experienced officers.

The excitement produced by the anticipation of war with England was followed by an actual war with a weak neighbor, a war inaugurated by the same influences which, in a more potent form, produced the rebellion, or rather of which the rebellion was but the legitimate and natural sequel. Called on by General Scott, who reposed in his professional skill the most unbounded confidence, Colonel Totten assumed, in 1847, the immediate control of the engineering operations of the army destined to invade the Mexican capital, directing in this capacity the siege of Vera Cruz. For his successful services he was breveted a brigadier general, March 29, 1847, "for gallant and meritorious conduct at the siege of Vera Cruz." Having thus successfully accomplished the special task for which he had been selected, he left the army and resumed his station at Washington.

In addition to the onerous duties of his office, involving, besides the labors described, the inspectorship and supervision of the Military Academy, his position and high reputation subjected him to calls for incidental labors by the government, by the States, or by municipal bodies. A few months prior to his

* When Forts Jackson and Philip, on the Mississippi, were attacked by the fleets of Commanders Farragut and Porter, they were not provided with the armaments intended for them, and the garrisons were demoralized by a long bombardment. It is not in place to discuss this subject here.

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appointment as Chief Engineer, 1838, he was, at the invitation of the Secretary of the Navy, ordered to visit the navy yard at Pensacola, and to prepare plans for dry-docks, wharves, sea-walls, and other improvements. Save a wretched failure in the shape of a wharf, the place—a navy yard in name—had been, up to this period, destitute of everything that characterizes such an establishment, except an imposing row of officers' quarters, and some few storehouses. A board of naval officers had been convened two years previously to consider the wants of the yard, and had recommended an extensive system of improvements, involving, among other things, no less than four dry-docks. Such constructions, reaching thirty or more feet below the level of low water in the loose sand of the bay shores, were difficult, demanding all the resources of the engineer, and it was on account of General Totten's eminent abilities and high authority in such matters that the Navy Department had recourse to his services. He made a report on the manner of construction, with plans which, if I mistake not, have been a guide in the subsequent operations. Unfortunately, to this day no permanent dry-dock exists, a floating wooden one having, through some influence, been substituted, at enormous expense, for the intended masonry structure.*

The legislature of the State of New York having, March 30, 1855, passed "An act for the appointment of a commission for the preservation of the harbor of New York from encroachments, and to prevent obstructions to the necessary navigation thereof," the commission so appointed invited and obtained the co-operation, as an "advisory council," of General Totten, Professor Bache, and Commander Davis, United States navy. The nature of the services thus rendered is best understood by reference to the reports of the commissioners themselves:

"The distinguished reputation of General Totten, Professor Bache, and Commander Davis for scientific attainments, their diversified experience in the construction of hydraulic works, and long observation of the influence of tidal currents in the formation and removal of shoals, indicated them as the best qualified to assist the commissioners in the discharge of their duties, while their high personal character precluded the possibility of their advice being affected by other than the single purpose of arriving at a just decision on the questions submitted to them." And again, after a particular allusion to the services of Professor Bache: "It is the gratifying duty of the commissioners to present to the notice of the legislature the important services which have been gratuitously rendered to the State by General Joseph G. Totten, chief engineer of the United States army, and Commander Charles H. Davis, of the United States navy, who, with Professor Bache, formed the advisory council of the commissioners. Animated by the single desire of preserving the port of New York in all its usefulness, they brought to the consideration of the subjects referred to them the diversified experience of many years spent in the examination and improvement of harbors. The several reports they have made on the exterior lines, on the improvement of Hell Gate, and on the preservation of Gowanus bay, are profound dissertations on the forces and actions of currents, and, while they evince, in some degree, the extent of the labors of those gentlemen, they demonstrate how just is the public estimate of their scientific attainments."

Following the example of New York, Massachusetts soon organized a similar commission for the port and harbor of Boston, on which the same gentlemen were invited to serve, receiving similar testimonials of the high value of their services.

* The "questionable shape" and suspicious object of this novel craft, set afloat and towed out into the bay by the rebels in 1861, caused anxious surmises on the part of Colonel Brown and the gallant garrison of Fort Pickens, reminding us of the famous "Battle of the Kegs" of the Revolution. The probable object was to sink it in the channel to prevent the entrance of our gunboats. But Colonel Brown's interference prevented the accomplishment of the design. It was abandoned by the rebels, and set fire to by Colonel Brown's orders.

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Of the many scientific men of the country who were associated with him in such duties, (of whom most usually was our eminent president,) none exhibited greater zeal and assiduity, few took a more prominent and useful part. The resolutions of the Light-house Board, on the occasion of his decease, which are appended to this memoir, would be, with slight modifications, applicable in reference to all his connexions of a similar nature. Inflexible in his integrity, uncompromising in his notions of duty, and watchful to the highest degree for all the interests of the government in all that concerned his charge, it is not strange that the shameless Floyd soon found him an obstacle to his peculiar operations. He was virtually banished from his office, or at least relieved from its duties, which he did not resume until Floyd left the War Department. He took this opportunity—perhaps the very first and only release during his life-time from the unceasing demand of duty—to visit Europe in company with Mrs. Totten, travelling through France, Italy, Germany, and England. Endued with those keen perceptions and that harmonious adjustment of faculties which render the mind susceptible to the beautiful, whether in nature or art, he was, in the true sense of the term, an artist. For music, for painting, for sculpture, he had a high relish and a most accurate and discriminating judgment.

By such a one the treasures of art and antiquity of Europe can only be adequately appreciated and enjoyed, as we know they were appreciated and enjoyed by General Totten. He did not fail, however, to take the opportunity to examine, as far as he was able, the fortifications of Europe, of the character and peculiarities of which, however, he had little to learn. On his return he was sent by Floyd to the Pacific coast, with directions to inspect the fortifications in construction, and to report on the defensive requirements of that region. This duty and the report thereon he executed in his usual thorough and exhaustive manner. It furnished him with the opportunity to acquire the same personal knowledge of all that concerned the seaboard defence of our newly acquired territories on the Pacific which he already possessed, beyond any other man, in reference to the Atlantic and Gulf coasts.

In the year 1851 General Totten inaugurated, and continued through the years 1852, 1853, 1854, and 1855, a series of experiments at West Point "on the effects of firing with heavy ordnance from casemate embrasures," and also "on the effects of firing against the same embrasures with various kinds of missiles." It will be interesting and conducive to a better understanding of the objects and results of these experiments to say a few words as to the origin and meaning of the term "casemate," and to give an account of General Totten's previous labors in connexion with the "casemate embrasure." The word is from the Spanish *casa-mata*, (a compound, most likely, of *casa*, house, and *matar*, to kill; though it is said also to mean a low or hidden house; but the etymology is not settled,) and seems to have been used to signify a countermine as well as a concealed place, arranged in connexion with a fortification, for containing and using a piece of artillery. According to Bardin* it appears to have been applied to the double or triple tier of uncovered gun platforms used by the early Italian and German engineers for flanking the ditch, as well as to vaulted galleries along the scarp wall. The term finally came to mean, in fortification, any vaulted room under the earthwork of the rampart or glacis, whether intended for service of guns, or for quarters of troops, or for containing stores. A *gun casemate* is such a vault abutting against the scarp or counterscarp wall through which an "embrasure" is pierced to permit the discharge of the gun; and in the naval service the term has been adopted to signify the part of an iron-clad vessel containing the guns, and which is, for that reason, especially protected by the iron plating. Hence the essential notion of the word seems to involve one or more of the attributes of concealment, shelter, and destructive purpose.

* Dictionnaire de l'Armée de Terre, &c.

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The use of the casemate, in some of its forms, for flanking purposes goes back to Albert Durer and San Micheli, in the early part of the sixteenth century, and it was resorted to by Vauban in his second and third systems, of which the tower-bastions are casemated throughout. But it was reserved for the Marquis de Montalembert, in the latter part of the eighteenth century, to give it an extraordinary development, and to make the casemate the essential element of a system of fortification. This "most intrepid of authors upon fortification" (as he is styled by Chasseloup) boldly attempted to apply to his art the same principles by which Napoleon won his victories—the concentration of superior forces upon the decisive points. In his projects we find, upon all parts where there must be a decisive contest of artillery, an extraordinary concentration of guns, amounting in some cases to ten times those of the attacking batteries, the construction of which it is intended to prevent, or which shall be promptly overpowered, if constructed. This concentration he effected, and could only effect, by the use of casemates, upon which, numerous and well constructed, he bases all the strength of his fortifications.

No author on this art has displayed greater genius or a greater affluence of resources, and no author has given occasion for so much acrimonious discussion. Rejected by the French, the principles of Montalembert have been made the basis of the modern German, or "Polygonal," system.

For sea-coast fortification the casemates of Montalembert had a singular applicability, and he has the merit, at least, of being the first writer who has seen in this branch of the art a subject of particular treatment, and who had given special designs for forts and batteries "for the defence of ports."

In no warlike structure was there so great a concentration of artillery as in a ship-of-war, such as it was fifty or even twenty years ago. And as there is no limit to the number of ships which may be brought to bear upon a shore battery save that of the range of artillery and the area of navigable water, it is easy to see to what overwhelming hostile fire such a work may be subjected. On the other hand, it frequently happens that the site otherwise most advantageous for a battery is low and contracted, rendering any accumulation of guns impracticable, if mounted on an ordinary rampart, and exposing the unprotected gunners to the fire of the sharpshooters with which the enemy's topmasts are filled.*

It is no small merit of Montalembert to have devised a method of mounting guns which should meet this case. Notwithstanding that the French corps of engineers rejected the system in its intended application, and disclaimed, as an engineer, its author, it nevertheless constructed, in 1786, for the defence of the roadstead and harbor of Cherbourg, forts which are in reality almost copied from his designs.† Following the example of the French, other European nations have adopted, for the defence of their seaports, works of the same character, of which the forts of Cronstadt and Sebastopol, once made familiar to us, in their outward appearance, by the pictorials, are recent specimens; and, as we have already seen, Colonel Williams introduced them into our country in 1807, by the construction of Castles Williams and Clinton, and Fort Gansevoort, New York harbor.

An objection urged against casemates, and a grave one, since it is aimed at one of their most important attributes, is that the embrasures of masonry are dangerous to the gunners, from their outward flaring surfaces reflecting into the interior the enemy's missiles. Montalembert was well aware of this objection, calling the embrasure, in its ordinary form, a "murderous funnel," (*entonnoir*

* The topmasts of many of the vessels of Commodore Farragut's fleet in the attack on Forts Jackson and St. Philip contained boat-*howitzers*, destined to fire canister at the gunners of the low batteries of those works.

† The celebrated Carnot, then an officer of French engineers, but who adopted the views of Montalembert, writes to him: "You have wrung from your adversaries the admission that well-constructed casemates are a good thing," &c. (*Zastrow, Histoire de la Fortification.*)

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meurtrière,) and his sagacity did not fail to prescribe the best remedy by rules intended to reduce to a minimum the external opening. He directed that the throat should be no larger than necessary to receive the muzzle of the gun and to endure the shock of its discharge; that it should not be more than two feet from the exterior surface of the wall; that the cheeks should be parallel to the sides of the sector of fire; and to render practicable these arrangements he invented the "*affut à aiguille*," (carriage with tongue,) which has served as the type of nearly all subsequent casemate gun-carriages. It is strange that, even while adopting the plans of Montalembert, European engineers should have almost wholly overlooked these maxims, and that it was reserved for our own illustrious engineer to make their application, and, in perfecting the casemate and the embrasure, to become a co-worker with Montalembert, by bringing the casemated water-battery to its highest degree of perfection.

I now revert to General Totten's labors in this connexion, and in reference thereto I quote from his report to the Secretary of War:

"The first casemated battery was completed in 1808. It has two tiers of guns in casemates and one in barbette. The exterior openings of the lower embrasures are 4′ 8″ by 6 feet, giving an area of 28 square feet; and of the second tier 3′ 8″ by 5 feet; area 18⅓ square feet; the horizontal traverse of the guns being limited to 44 degrees.

"Within three or four years of the time just mentioned two other casemated batteries were built, each having a single tier of guns in casemates, with exterior openings of 4′ 5″ by 5 feet, area 22 square feet; one with horizontal scope of about 42 degrees, and the other of about 45 degrees.

"In 1815 the author of this report was called on to prepare a project for the defence of an important channel; and, having been convinced, while employed as an assistant in the construction of two of the batteries just mentioned, that the principles and the details by which the embrasures and the dependent casemates had thus far been regulated were erroneous and defective, set about a careful study of the conditions to be fulfilled in providing for the heavy guns of that period mounted on a casemate carriage that had already been approved and adopted. The result was an embrasure having an exterior opening of 4 feet wide by 2′ 6″ high at the outside line of the cheeks, and 3 feet high at the key of the covering arch, the throat being 1′ 10″ wide. This provided for all the depression and elevation of the gun that the carriage permitted, and also for a horizontal scope of full 60 degrees. Covered with a lintel instead of an arch, the height of the exterior opening might be a little less than 3 feet.

"The plan of this embrasure shows that the interior opening is 5′ 6″ wide, and that the plane of the throat is within 2 feet of the outside of the wall, which, just at the embrasure, is 5 feet thick.

"A slight modification fitted this embrasure, when applied to flanking or interior defence, to receive at first a carronade of large calibre, and of later years a howitzer instead. When these latter were liable to be assailed by musketry, the outer cheeks were made *en cremailliere*, (notched,) a long-known device.

"It was with timidity and hesitation that the cheeks of this embrasure were placed so near the track of the ball, when fired from the casemate, with the maximum obliquity, and the results of an early trial with experimental embrasures at Fortress Monroe gave some sanction to the doubt. The first two under trial were built of lime-mortar, and were soon shaken to pieces by the blast of the gun. Another one, however, constructed of bricks laid in cement-mortar, sustained without injury several hundred discharges. These last results have been confirmed wherever there has been practice from our embrasures, which, with immaterial differences, have, since 1815, been constructed in all our casemated batteries according to the preceding description."

It will be seen from the foregoing quotations how thoroughly General Totten, in adopting the casemated battery, was imbued with the spirit of its illustrious

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originator. If, as is likely, he was aware of the latter's rules on this subject, he was the first to appreciate their essential importance, and to prove the practicability of their application. It is probable, however, that the close study of the subject, critical observation, and keen sagacity which so distinguished him on all occasions, and which taught him to accept nothing as the best which was susceptible of improvement, led him to recognize as "murderous funnels" the embrasures of routine—to create anew the rules of Montalembert, and to make, for the first time, a successful application of them. He reduced the throat to nearly an absolute minimum; he placed it at two feet from the outer face of the wall, diminishing the external openings from eighteen, twenty-two, and twenty-eight, down to about ten square feet, while he increased the sector of fire of the gun from forty-five to sixty degrees; thus adding one-third to its field of fire, and consequently to its value.

The embrasures, thus modelled in 1815, remained unchanged until the year 1858, but the casemate continued a subject of study and experiment during most of his life. The perfecting of ventilation, the determination of the dimensions and height of the piers, of the span and rise of the arches, their thickness and manner of covering, so as to obtain perfect drainage and to avoid the injurious effects of frost, &c., were problems of prolonged research and skilful solution, establishing for General Totten the right to be considered the author of the American casemate.

In connexion with these researches may be mentioned those also which were directed to the determination of the manner of mounting guns "en barbette." * As the dimensions of sea-coast ordnance increased, more and more elaborate structures became necessary for their mounting and management. The planning and construction of the carriages belonged to the Ordnance Bureau, but it was General Totten's task to adapt the platforms and parapets thereto. None but the engineer or artillerist can thoroughly understand the difficulty and complexity of the problems therein involved. To provide a platform which shall support, without the slightest deflexion, the weight, and resist the shock of discharge, while it provides for the training or pointing of the gun—which is so adapted to the parapet as to allow the maximum horizontal sector of fire, and to afford the most perfect cover to the gunners consistent with allowing all the depression demanded by the circumstances of the case—such are the conditions to be fulfilled, separately, for each calibre of gun. After years of experience, and after our sea-coast ordnance had attained its highest development prior to the introduction of the rifled gun and fifteen-inch columbiad, General Totten embodied his results in a lithographic sheet exhibiting to the eye of the engineer for every kind of gun and for every probable case the particular solution. This single sheet exhibits strikingly the characteristics of the author's mind—the profound study which he brought to bear on every subject, the scrupulous accuracy of his determinations, which neglected no appreciable magnitude, and the thoroughness and generality of his solutions.

When the embrasure of 1815 was designed, ships' armaments contained no gun heavier than a twenty-four or thirty-two pounder. As the calibres increased it became a matter of doubt whether the five feet thickness of wall immediately about the embrasure was sufficient. At the same time the progress made in the art of forging large masses of iron had suggested that by its use the funnel form of the mouth might be entirely done away with, and the exterior opening reduced to an absolute minimum. Nothing but *experiment* could lead to sound conclusions, and the experiments referred to on a former page were instituted, the principal objects of which were (in General Totten's own language)—

I. "To ascertain the effects of firing with solid balls, with shells, and with grape and canister, from heavy ordnance at short distances, upon various materials used in the construction of casemate embrasures.

* A barbette gun is one which is fired over a parapet.

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II. "To determine whether these embrasures might have a form that would shut out most of these missiles, and resist for a time the heaviest, without lessening the sector of fire, horizontal and vertical, of the casemate gun.

III. "To determine the degree to which, without injury from the blast of the gun, or lessening its scope of fire, the throat of the embrasure, and also the exterior opening, might be lessened.

IV. "To determine whether all smaller missiles might not be prevented from passing through the throat into the battery; and whether the smoke of the blast might not also be excluded by simple and easily managed shutters."

Targets were constructed representing the wall of a fortification pierced with its embrasures. All varieties of materials were employed in the walls, and every suggested method of constructing the embrasure was tried. General Totten's report shows that the minutest detail of construction was directed by himself, and that he personally superintended the experiments. They were carried on at intervals during four successive years, the results of each year suggesting the object of experiment for the next.

It would be out of place here to follow the report through its detailed accounts of the firings, or even to attempt to sum up the conclusions arrived at, referring as they do to such a variety of subjects; but those concerning the thickness of the scarp-wall and the use of wrought iron may be properly quoted as among the most important:

"The general conclusion from these trials is, that, whether of cement concrete, of bricks, or of hard stones, the portion of the wall at and around each embrasure having the thickness of five feet only should be no larger than is indispensable for the adaptation of the gun and carriage to the embrasure; if restricted to a small area, this thickness will suffice—not otherwise.

"The thickness of five feet will resist a number of these balls, impinging in succession on that space, provided the bond expand promptly above, below, and on each side, into a thickness greater by some two and a half feet or three feet or more. Were the wall no thicker generally than five feet, being reinforced only by piers some fifteen feet apart, it would soon be seriously damaged by battering at short distances"

And in reference to iron it is stated: "First, it may be fairly assumed that a plate eight inches thick of wrought iron of good quality, kept in place by a backing of three feet of strong masonry, will stop a solid ball from an eight inch columbiad fired with ten and a quarter pounds of powder from the distance of two hundred yards. The plate of iron will be deeply indented at the point of impact, the ball carving for itself a smooth bed of the shape and size of one hemisphere, in which it will be found broken into many pieces easily separable, and it will, besides, be somewhat bent generally. The masonry behind will be much jarred, and, unless strongly bonded, be considerably displaced; moreover, unless the thickness of three feet is well tied into thicker masses immediately adjacent on the sides and above and below, the general damage will be severe.

"Second, this plate will be much the stronger for being in a single mass, and not made up of several thinner plates. The continuity effected by bolts and rivets of the made-up plates is broken even by weak assaults, so that afterwards the stronger, instead of a joint opposition, finds only a succession of feeble resistances.

"Third, a thickness of two inches is ample for shutters designated to stop the largest grape-shot. With this thickness they will be neither perforated nor deformed by anything less than cannon balls or shells. These shutters also, for the reason just given, should be made of a single thickness. The firings show the necessity of concealing entirely, even from the smallest iron missile, their hinges and fastenings.

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"Fourth, a wrought iron plate of half an inch in thickness is adequate to protect the outer margins and the offsets of embrasures from injury by grape or canister shot."

These facts established, the effect of the form and dimensions of the embrasures in carrying in the smaller missiles was investigated; the recorded results will enable us to appreciate the force of Montalembert's expression, "murderous funnels," as even its author could not do.

"Suppose a hundred-gun ship to be placed within good canister range of a casemated battery of about the ship's length and height, to the fifty guns of the ship's broadside there would be opposed about twenty-four guns in two tiers in the battery. The ship would fire each gun once in three minutes, or ten times in half an hour; the fifty guns would therefore make five hundred discharges within that time.

"With one hundred and fifty-six balls in each thirty-two-pound canister, (weighing in all thirty-one and a half pounds,) there would be thrown seventy-eight thousand balls in thirty minutes. Supposing one-half to miss the fort, which, considering the size of the object and the short distance, is a large allowance, there would still remain the number of thirty-nine thousand balls to strike a surface of (say) six thousand square feet—that is,

"On each square foot	6½ balls.
"Or within the exterior opening of one of the embrasures of our second target, of which the area is 8.9 square feet, there would fall	58 balls.
"Within the European embrasure above mentioned, having fifty-four square feet of opening,* there would be received in half an hour	351 balls."

And if the ship carried modern eight-inch guns, and fired canister of musket balls, these figures would be, in the three cases, fifty-one, four hundred and fifty-three, and two thousand seven hundred and fifty-four. These theoretical conclusions were verified by the experimental firing with grape and canister, and it is thus seen how greatly superior General Totten's embrasure of 1815, which is but little larger than that of the second target, is to the European one, and how thoroughly he had, at that early day, mastered the subject. He had, indeed, perfected the embrasure so far as it could be done with masonry alone.

But the quantity of small missiles which even that embrasure would receive is dangerously great, and would be much diminished if the funnel-form of the mouth could be done away with, and the throat reduced to an absolute minimum. This could be accomplished only by the use of iron, and the conclusions I have just quoted furnish the data necessary to its successful application.

The throat (still placed two feet back from the outer face of the wall) being formed of iron plates, it became practicable to cut away the flaring surfaces of masonry, so as to present others parallel or perpendicular to the face of the wall, and by this change of form to exclude all missiles not directed within the limits of the throat itself. Still more completely to accomplish the object, wrought-iron shutters of two inches thickness (as determined by the experiments) were applied, by which, except at the moments of aiming and firing, the embrasure was entirely closed.

Such is the history of the casemated battery and casemated embrasure in the United States. We have seen that the perfection to which they have been brought is due to General Totten, and to General Totten alone. Nor is it to the experiments which I have been describing, laborious, skilful, and thorough as they were, that we may solely attribute such results. We must look back to

* Reference is made to the embrasure of a European work built within the last twenty-five years.

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the time when, a first lieutenant of engineers, he saw and aided in the construction of our first casemated fort, and when he, fully appreciating its merits and recognizing the defects which a disregard and want of appreciation of the illustrious projector's own principles had entailed upon it, set himself to the task of enhancing the one and correcting the other.

The ten years which have elapsed since 1855 have witnessed changes in the character of sea-coast and naval artillery, and an increase in the calibres and weight of their projectiles, which no one at that date would have anticipated; hence some doubt may be entertained whether our casemated masonry works are adequate to contend with iron-clad vessels armed with the modern artillery. This is a question which it remains for experiment or experience to decide. It has, as yet, not been demonstrated that a masonry fort, constructed as our more recent works are, will not, armed with the powerful guns now being introduced, endure the contest quite as long as its iron-clad antagonist can protract it.

In this connexion it is due to General Totten to say that he has himself been ever the most strenuous advocate of "big guns," the most urgent instigator of their production. The writer well remembers when, seated with him on the piazza of the officers' quarters at Fort Jackson, our eyes resting on the mighty stream flowing past us, upon the defence of which our thoughts and conversation had been turning, he exclaimed, "We must have a 20-inch gun." The idea was novel to me at that time, and I exhibited some surprise. He went on to say that, thoroughly to prevent the passage or attempted passage of an armed steamship, there must be not only danger but almost a certainty of destruction. "Let us have guns such that (to use his own phrase) 'every shot shall be a bird.'" The invention of armored ships, not then foreseen, has increased the necessity of having such guns as he, on other grounds, so strongly advocated. He expressed the greatest confidence that a gun of the dimensions he named would yet be made and introduced into our batteries, and added the interesting statement that in his earlier days he had found much difficulty in impressing upon the members of boards on which he had served the necessity of having guns in our harbor defences larger than 24-pounders. To the labors and genius of a Rodman we owe the actual invention of the art of constructing fifteen and twenty-inch guns; but without the unceasing stimulus of General Totten's known and urged views, it is doubtful whether Rodman's labors would have been called for or sustained.

The preceding pages have been mainly devoted to the illustration of our departed associate's career as an officer and as the Chief Engineer of the United States. Before turning our attention to other spheres of his usefulness, it seems fitting to quote from one of his eulogists the following summary of his official characteristics:

"In wielding the influence of his office as Chief Engineer, the prominent traits exhibited by General Totten were strict justice and scrupulous integrity. No sophistry, no blandishments, no arbitrary exercise of superior authority could turn him in the least from his steadfast adherence to his own sense of duty. Avoiding all useless collisions with his official superiors, showing due respect to their station, he never failed to call their attention to any errors committed by them with respect to the department under his charge; nor did he ever leave them any excuse for wilful wrong-doing by remaining silent, even when he knew that his suggestions would not only be ill-received and of no use, but might be visited by the exercise of those petty vexations which official superiors can employ against those under them who thwart their misdoings.

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"The individual traits of General Totten were strongly marked. Powerfully built, of a constitution of the most vigorous stamp, cool, potent, and persevering, of sound judgment and variety of intellectual capacity, nature seemed to have

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endowed him for the profession that he had chosen. His attention to the performance of his professional duties amounted to a devotion.

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"Whilst steadily adhering to what had been well settled by experience, and withstanding the ill-directed efforts of that class of men of whom some are to be found in all bodies, who seize upon every novelty and press it into the service of their own crude notions, he was far from rejecting well-reasoned projects of improvement, and encouraged, as his own immediate works show, every step towards real progress. Although not belonging to the class of mere inventors, he had that invaluable faculty to one holding a position of so great public responsibility, of detecting the fallacies with which this class too frequently deceive themselves as well as others."

In 1863, under the law uniting into one the two corps of engineers and topographical engineers, General Totten was advanced to the full grade of brigadier general. A few days before his death the Senate unanimously confirmed his nomination by the President to be "major general by brevet, for long, faithful, and eminent services." Never were such distinction and such commendation more fitly bestowed.

Giving the precedence in order to duties most intimately connected with his profession, I now turn to General Totten's important labors in establishing and maintaining our present light-house system.

The attention of Congress having been called to the pressing necessity for introducing certain reforms, administrative and executive, into the light-house system of the United States, that body, after full discussion of the subject, passed an act (approved March 3, 1851) stipulating that from and after that date, in all new light-houses and all light-houses requiring illuminating apparatus, the lens or Fresnel system should be adopted.

Another chapter of the same act provided for the appointment of a commission, to be composed of two officers of engineers of the army, and such civil officers of high scientific attainments as might be under the orders or at the disposition of the Treasury Department, and a junior officer of the navy as secretary, whose duty it should be to inquire into the condition of the light-house establishment of the United States, and to make a general detailed report and programme to guide legislation in extending and improving our present system of construction, illumination, inspection, and superintendence.

The board, as constituted by the President, consisted of Commander W. B. Shubrick, General J. G. Totten, Colonel James Kearney, Captain S. F. Dupont, United States navy, Professor A. Dallas Bache, superintendent United States coast survey, and Thornton A. Jenkins, United States navy, as secretary.

Its labors were directed first to demonstrating the evils, irregularities, and abuses which had crept into the light-house service under the management of the Fifth Auditor of the treasury, (the late venerable and highly respected Stephen Pleasonton,) among which were found to be those arising from defective principles of construction, renovation, and repair of light-houses, inadequate protection to sites and badly planned and poorly constructed sea-walls. It may readily be understood how the peculiarly practical mind of General Totten, brought to bear upon these and kindred subjects of inquiry, developed and demonstrated the necessity of at once employing proper scientific systems and plans of construction. His assistance in collecting data was found invaluable, and his lucid, clear mind was equally to be trusted in detecting faults and in devising the remedy.

Without entering into a detailed account of the labors of this board of inquiry, it is sufficient to state that the mass of evidence collected by it was so irresistible in proof of existing errors, that Congress, under date of August 31, 1852, passed an act which created a permanent light-house board, to which was confided all the duties of the establishment. General Totten was appointed to this

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board, and served as a valued and honored member, with but a short interruption, until his decease. Its early labors were arduous and onerous A new system was to be founded where before had been none; order should come from chaos, error was to vanish before science, economy to succeed to wastefulness, darkness to give place to light. The task, great as it was, fell upon no shrinking hearts or feeble brains. The work was accomplished; and long before his lamented death General Totten had the satisfaction of witnessing the labors of himself and his associates crowned with full success. The board in its deliberations derived great benefit from his presence and participation, and relied with entire assurance upon the correctness of his judgment upon all subjects concerning which he would express an opinion. He served almost continuously as chairman of the committee of finance, and the decisions of that committee owe not a little of their sound wisdom to the searching scrutiny joined to the generous and liberal views of its chairman. He was also a member of the committee on engineering, in which department his peculiar merit was most conspicuous. The principal works with which his name is associated, and which claim our attention, are the light-houses on Seven-Foot Knoll, near Baltimore, Maryland, and on Minot's Ledge, off Cohasset, Massachusetts.

The former is an iron pile structure standing in some ten feet of water. It was erected at a time when the science of iron pile construction was in its infancy, and was one of the first works of the kind undertaken by the board. Hence it was a matter of deep interest and solicitude. It was successfully completed, and the light-house stands to-day a signal reward for the thought and labor bestowed upon its conception and construction.

The light-house at Minot's Ledge was a work of far greater difficulty, and to its proper location and plan General Totten lent the resources of his great experience and exhaustless knowledge. As his intimate acquaintance with the whole coast of the United States, acquired while acting as a member of the board of engineers, and during his annual inspections as Chief Engineer, enabled him, with the aid of the Coast Survey, to indicate with almost unerring certainty the proper location and character of all new light-houses, so his practical knowledge of construction, in laying the foundation of our sea-coast fortifications and the sea-walls by which the sites of many of them had to be protected, prepared him to grapple with the difficulties of constructing a masonry tower in this exposed situation, and to bring to their solution all the known and tried resources of engineering.

Minot's Ledge is situated about twenty miles southeast of Boston. It is the outer rock of a very dangerous group called the "Cohasset Rocks," lying at the very wayside of navigation to the harbor of Boston. A light-house of iron had been erected here a few years previous to the organization of the Light-house Board, but it was carried away in a fearful storm which swept along the coast of New England on the 16th of April, 1851.

Not only the commercial interests of the country, but humanity demanded that it should be replaced, and Congress promptly made an appropriation for this purpose, stipulating that the tower should be erected on the outer Minot, and confiding its construction to the Topographical Bureau. This bureau, having publicly advertised, received sixteen distinct proposals to erect the proposed structure, but finally recommended, in view of the difficulties to be overcome, and the fearful fate of its predecessor, that it should be located on one of the inner rocks. In accordance with this recommendation, an act of Congress was passed authorizing the Secretary of the Treasury to "select, instead of the outer Minot's Ledge, any more suitable site." Before further action had been taken, the whole subject fell into the hands of the newly created Light-house Board. A joint resolution of Congress was then passed (1854) giving to this board the decision as to the location and the mode of construction.

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The question of location being thus widely reopened, a committee of the board was sent to make a personal examination of the locality. General Totten was, of course, a member of this committee, and was not long in making up his mind that the outer and not the inner Minot was the proper site. His arguments on this subject proved conclusive with the board. He urged that if the light were placed on any of the inner rocks the desired object would be but partially accomplished, since in a dense fog or thick snow-storm vessels might approach within a few hundred feet without being able to see it, and thus be lost upon the outer ledge.

When the question of practicability was broached, his professional pride seemed to be roused. He argued that, after what had been done on the coast of England in the erection of the Eddystone light-house a century ago, and more recently of the Bell Rock and Skerryvore lights, it would be a humiliating admission that the requisite science and skill were not to be found in this country to erect a similar structure where, as all admitted, one was so much needed.

He carefully studied the accounts of the construction of the Eddystone, Bell Rock, and Skerryvore light-houses, by Smeaton, Robert Stephenson, and Allan Stephenson, but the fact that the Eddystone was begun at high-water mark, that the ledge of the Bell Rock was extensive, and elevated several feet above low-water, and that the Skerryvore presented still less difficulties, while the surveys show that the outer Minot's ledge was very contracted, and that the proposed structure must commence even below low water, did not deter him from advocating and designing a work for this formidable position more difficult to accomplish than anything which had ever preceded it.

The plans which he prepared were drawn with his usual minuteness of detail. The problem was one peculiarly fascinating to engineers—the uniting into a single mass the several component stones of the structure so that no one can be detached from the rest, that each shall be a bond of connexion to those adjacent, that the whole shall be an integral, having a strength ample to defy the most powerful foe to human structure, the fury of the ocean's winds and waves. Though not himself the constructor of the work, yet to have insisted against authoritative adverse opinion on its practicability, to have planned the building and selected the engineer who should rear it, and to have overlooked the work from its commencement to its completion, entitles him, even were this his only work, to recognition among the Smeatons and Stephensons and Brunels, as one of the great engineers of the age.

For the execution, he selected Captain (now Brevet Brigadier General) Barton S. Alexander, of the Corps of Engineers, an officer whose experience, energy, boldness, and self-reliance eminently fitted him for the task. It is for him to recount the history of the work, to give to the world the interesting narrative of difficulties met and overcome, of patience requited and energy triumphant. General Totten watched its progress with unflagging interest, making frequent visits to the superintending engineer, aiding him with his counsels and encouraging him in his difficulties. He lived to enjoy the proud satisfaction of inspecting the finished structure; and when at last from its towering summit flashed o'er the troubled waters the beacon-light of safety to the tempest-tossed mariner, he might well exclaim, with the Latin poet, though in a nobler sense and in a less boastful spirit, "Exegi monumentum ære perenius."

General (then Colonel) Totten was named in the act of Congress organizing the Smithsonian Institution in 1846 as one of the Regents to whom the business transactions of that celebrated establishment are intrusted. At an early meeting of the Board of Regents he was appointed one of the Executive Committee, and was continued in these offices by repeated election to the time of his death, a period of nearly eighteen years. He evinced a lively interest in the organization of the Institution, and after a careful study of the will and char-

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acter of Smithson, gave his preference to the programme prepared by Professor Henry, which was finally adopted. His advocacy of the plan was the more important since he was well acquainted with the scientific character of James Smithson, and had himself, as we shall see in a subsequent statement, been engaged in a line of research similar to one of those pursued by the founder of this Institution.

In the reconstruction of the interior of the main part of the Smithsonian building which had partly been completed in wood, but which had given way, he strongly urged the employment of fire-proof material, to the adoption of which the preservation of the valuable collections of the Institution is indebted. In the discharge of his duty as one of the Executive Committee, he acted with the same conscientious regard to the sacredness of the trust which characterized all his official labors, and critically examined all the accounts, assured himself as to the proper expenditure of the funds, and advised as to the general policy to be pursued. In him the Secretary ever found a firm supporter, a sympathetic friend, and a judicious adviser. Unostentatious, unselfish, and only desiring to advance whatever cause he might be connected with, he gave the most valuable suggestions as if they were of little moment, and in such a way that they might appear to be deductions from what others had said or done, being more anxious that his suggestions should be properly carried out than that they should be accredited to himself.

As a recreation from the more arduous studies of his profession, he devoted in the early part of his life his spare hours to natural history, paying much attention to the mollusca of the northern coast of the United States; and he was perhaps the first, or at least one of the first, to introduce into this country the use of the dredge for the search of these animals, thus not only obtaining many species which would otherwise have escaped attention and getting fresh and unmutilated specimens of species previously known only from dead imperfect shells, but enabling us to learn something of the habits and associations of the animals—information of much greater scientific value than the discovery of a few new species. His observations and studies in conchology were embodied in an article entitled "Descriptions of some Shells belonging to the Coast of New England," published in the American Journal of Science and Arts for 1834 and 1835, and Dr. A. A. Gould was largely indebted to him for material employed in his "Invertebrata of Massachusetts," many of the species of shells contained in which were first found to inhabit our coast by General Totten; others were new species discovered by him, though described by Dr. Gould, while some nine or ten specimens were not only discovered but described by him. The descriptions of species and remarks evince his powers of observation and critical acumen, and almost all of the forms described have stood the test of subsequent examination, and the validity of their specific distinction been confirmed, although several of them are among the most common shells of the coast; on account of their small size, they had been previously overlooked or neglected, but their insignificance in size did not diminish their interest in the eyes of one who viewed nature in all her manifestations as worthy of contemplation. One of the most beautiful and almost the smallest of the bivalves of our coast, called by him *Venus gemma*, has since been dedicated to him under the name of *Gemma Tottenii* by Dr. William Stimpson.

General Totten collected principally on the shores of New England, and his explorations with the dredge were almost entirely made in the vicinity of Newport, R. I., and of Provincetown, Mass. A list of the shells of Massachusetts was contributed by him to one of the preliminary reports on the natural history of that State. The principal species described by him are as follows: *Modiola glandula*, (now known as *Mytilus decussatus*,) *Venus gemma*, (*Gemma Tottenii*.) *Solemya borealis*, *Bulla oryza*, *Natica immaculata*, *Turbo minutus*, (*Rissoa minuta*,) *Turritella interrupta*, (*Chemnitzia interrupta*,) *Actæon trifidus*, (*Chem-*

nitzia trifida,) and *Pasithea nigra*. This last-named species he described from young shells, and afterwards finding the adult shell, which is very different, called it *Cerithium reticulatum*. It has for many years been called *Cerythium Sayi*, but a late author has again credited it to him, under the name of *Bittium nigrum*.

A species of *Succinea* (*S. Totteniana*) was dedicated to General Totten by Mr. Isaac Lea, of Philadelphia.

Conchologists are also indebted to General Totten for the discovery of means for the preservation of the epidermis or periostraca of shells, which is in many species so liable to crack, and this recipe has been received with much approbation by many collectors who have found it to supply a want much felt. The valuable collection of rare shells which he made at this period of his life he presented to the Smithsonian Institution, without the usual condition that it should be preserved separately, but to be used most advantageously for the advancement of science, to complete the general collection of the museum, or for distribution as duplicates to other establishments.

In the "Annals of the Lyceum of Natural History of New York" for 1824 (vol. i, pp. 109–114) he published "Notes on some new Supports for Minerals, subject to the Action of the Common Blow-pipe." These researches on the use and power of the blow-pipe appear to have been incited by an article of James Smithson, the subsequent founder of the Smithsonian Institution, and the memoir of Totten commences with a reference to and rehearsal of the experiments of that gentleman, as detailed in a letter to the editor of the Annals of Philosophy. Smithson, it was remarked, had communicated several ingenious modifications of Saussure's process with supports of splinters of sapphire, which process, he observes, "has been scarcely at all employed; owing partly to the excessive difficulty, in general, of making the particles adhere, and in consequence of the almost unpossessed degree of patience required, and of the time consumed by nearly interminable failures." Detailing the processes of Mr. Smithson, three in number, and the success of that gentleman, he adopted a modification of Smithson's third process, having recourse, as a support, to a portion of the mineral itself, which he designed to expose to the action of the flame. "Instead, however, of taking upon the point of platinum wire a very minute portion of the paste made of the powdered mineral," according to Mr. Smithson's method, he "formed a paste by mixing the powder with very thick gum-water, and, rubbing a little of it under the finger, formed a very acute cone, sometimes nearly an inch in length, and generally about a twentieth of an inch in diameter at the base." To the apex of such cones the most minute particles would adhere under the strongest blast of the blow-pipe, and being insulated by the destruction of continuity of the particles of the cone, the flame could be directed upon it with undiminished fervor. Experiments were made on a number of minerals, confirming those of Mr. Smithson, and greatly extending the power of the blow-pipe, and he was thus led to add to the three classes divided in relation to this instrument a fourth, namely, "such as are fusible, *per se*, in microscopical particles."

The attention of the inhabitants near the shores of the great lakes of the north had often been arrested by the sudden disappearance in the spring of the ice on the surface. The lakes would be covered with a continuous sheet of solid ice in the evening, and in the next morning all would have vanished. Wild speculations had been entertained as to the explanation of this phenomenon previous to the investigation of the subject by General Totten, who presented an article on the subject to the American Association for the Advancement of Science at the Springfield meeting in 1859.

From this it appears that his attention had been directed to it forty years before, at Plattsburg, New York. Ice is composed of a congeries of prismatic crystals, whose axes are at right angles to the surface of the mass. "Examina-

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tions then and afterwards made of floating fresh-water ice have shown that the natural effect of the advancing year is gradually to transform ice, solid and apparently homogeneous, into an aggregation of these irregular prismatic crystals, standing in vertical juxtaposition, having few surfaces of contact, but touching rather at points and on edges, and kept in place at last merely by want of room to fall asunder. Until this change has somewhat advanced, the cohesive strength of ice of considerable thickness is still adequate to sustain the weight and shock of the travel it had borne during the winter; but becoming less and less coherent by the growing isolation of the prisms, or more and more 'rotten,' as the phrase is, though retaining all its thickness, the ice will at last scarcely support a small weight, though bearing upon a large surface, the foot of man easily breaking through, and very slight resistance being made to the point of a cone." The points of contact of the particles being destroyed, each will drop into the position in the water below required by the place of its own centre of gravity—that is to say, it will be upon its side, exposing large surfaces to the action of the warm water. With the ice in such condition, a heavy wind will cause the disruption of the particles, and the speedy disappearance would be the consequence. This remark of General Totten as to the crystallization of ice has since been extended to nearly all substances which, in becoming solid, assume the crystallized form. The axes of the crystals tend to assume a position at right angles to the surface of cooling.

As illustrative of the mind of General Totten, it may be stated that he seldom failed to give valuable hints for the improvement of processes or inventions which were brought before him in the course of the discharge of his numerous official duties. Among these was an instrument for ascertaining the daily amount of evaporation from a given surface by means of the descent of water contained in an inverted graduated tube, the open end of which was immersed in the basin from which the evaporation took place. With a slight correction for variation in barometrical pressure, this instrument gives, with more precision than any other with which we are acquainted, the amount of evaporation.

I have, gentlemen, thus faintly and inadequately sketched the life and services of our departed friend and associate; but, faint and inadequate as my sketch may be, I feel confident that every one will recognize in it the lineaments of a great and true man. Labors so protracted, results so important and varied, it is the destiny of but few to achieve, and for him who achieves them may justly be claimed a high niche in the temple of fame, and the grateful homage of the patriot and of the seeker after truth. One of the oldest of the corporators of this academy, it was permitted him only to contribute his past labors and his shining example. But these are indeed a rich legacy. Proud, indeed, may this youthful institution be that it can enrol among its members the name of Joseph Gilbert Totten; proud, too, may each one whom I now address—each one of its members—be, if he shall achieve but a far less claim to recognition among men of science. To the aged among us—to those who were young with him, and like him have crowned a life of toil by honorable achievements—I need not speak. *They* require no example, and they may feel in contemplating his history an additional assurance that their own works, too, "shall praise them." To the more youthful or to the middle-aged, who have just commenced, or but partially accomplished, the steep ascent which leads to honorable fame, his life is precious in its teachings.

He was a patriot in the broadest and best sense of the term. To his country he had given himself, and every faculty of his being was devoted to her honor and welfare—realizing almost literally the thought of Rousseau, "the child on entering life ought to see his country, and to the hour of his death see but her."

Like all who have left lasting results for the benefit of their country or of mankind, he was a hard worker. But ill-regulated labor, however arduous,

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could never have accomplished what he accomplished. Beyond all men I ever knew, he was *systematic;* and few indeed are the examples of a life, in *all* things, so perfectly regulated. The beautiful *order* which pervaded all that he did is scarcely less worthy of study and admiration than the achievements to which it so materially contributed.

He was no trifler with the realities of life, who dallied with them for his pleasure or who wielded them as instruments of ambition or self-interest. To him, as to all true men, the meaning of life was concentrated in one single word, DUTY. This "chief end of man," which is to glorify God by obedience to his laws in the use of the faculties he has bestowed, was his ruling principle—the celestial cynosure to which his eyes were ever directed, and from which no allurement of lower motives could divert it. Nor was his sense of duty of that frigid, repulsive nature which reduces the conduct of life to a formula, and, substituting rules for emotions, seems but a refined selfishness. He was warm and sympathetic, finding his chief happiness in the pleasures of domestic and social intercourse, but singularly susceptible to everything that ministers to innocent enjoyment.

Perhaps no more striking illustration than his history affords could be found of the truth that the path of duty is the path of happiness. His life was eminently a happy one, and his, indeed, was that "peace of mind which passeth understanding." Though devoted from his youth to the military service of his country, and doomed to the vicissitudes of a soldier's lot, he was permitted, to a greater degree than most men, to enjoy the blessings of the domestic circle. There, indeed, he sat enthroned, the idol of a family of whose supreme affection and immeasurable devotion he was the object. Nor dare we call those blows by which a Heavenly Father reminds us that this world is not our "abiding place," and teaches us to look beyond to "an house not made with hands, eternal in the heavens," sources of unhappiness to him who receives them as from the hand of One "who chasteneth whom he loveth." One by one, he lived to see all his three sons, two of his four daughters, and finally the companion of the joys and sorrows of so many years, precede him to the grave.

Beautiful beyond all else that earth presents is that conjugal companionship, so touchingly depicted by Burns, which, beginning in youth, is permitted to continue unbroken till the Psalmist's period of life is overpassed. During the later years of their lives, Mrs. Totten, no longer bound to the domestic hearth by the cares of a growing family, became truly an inseparable companion. Never, when it was at all practicable to have her with him, did he ride or walk, or make a journey, or perform one of his periodical tours of inspection, without her companionship; nor could one see them together without feeling that they presented a model of whatever is amiable and lovely in the conjugal state. If he was to her the embodiment of all that is most worthy of respect and love in man, not less marked was his deference to her. In her own sphere—as woman, wife, mother—she was supreme, and her judgment his law. When, but two years before his own death, she was somewhat suddenly called away, it seemed as if he regarded it as a message from on high, "set thy house in order, for thou shalt die and not live." No murmur escaped his lips, and no long-continued sadness clouded his brow, but there was an unwonted gentleness and quietude in his demeanor, a softening, as it were, of his nature, which revealed how deeply "the iron had entered his soul." His health and bodily strength seemed to continue little impaired, and his devotion to the duties of his office undiminished. But once, during a life protracted beyond the usual span, had that powerful frame submitted to the sway of sickness, and he seemed to have unusual promise of a still further protracted life. But such promises proved deceitful. Early in March, 1864, he was attacked with pneumonia. His illness was not at first deemed alarming, and, indeed, at one time he was supposed to be convalescent, but a relapse ensued, and on the 22d of April he expired, having borne the suf-

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ferings of his sickness with cheerfulness and resignation, and retained to the last the perfect use of all his mental faculties. He had long been a member and communicant of the Episcopal church, and died in the Christian's hope of a joyful resurrection.

Gentle, kind, and good, mild, modest, and tolerant, wise, sagacious, shrewd, and learned, yet simple and unpretending as a child, he died as he had lived, surrounded by hearts gushing with affection, and the object of the respect and love of all with whom he had ever been associated.

The greatest of sculptors, the greatest of painters, a man unsurpassed in boldness and originality of thought, and whose name is among those of the few whose genius overpasses the limits of country and claims homage from all mankind—Michael Angelo—in a work stamped with the maturity of his powers, carved a figure known to the world as "Il Pensiero," or Thought. There exists in art no other personification of meditation, no other type of self-collectedness and profound thought.

The sculptor arrayed it not as a philosopher, as a monk, as a poet, as an artist, as a theologian, as a scholar, nor even as a pope. And yet these different types of thinkers were not wanting in the past or present of the age and country of a Raphael, of a Correggio, of a Leonardo da Vinci, of a Dante, of a Savonarola, of a Marco Polo, of a Columbus, of a Machiavelli, of a Galileo, of a St. Francis de Assis, of a St. Thomas Aquinas, of a Julius II, of a Leo X, and of a Clement VII.

How, then, has Michael Angelo arrayed his personified "Thought?" In the garb of a Soldier, upon the breast the cuirass, upon the brow, wrapt in meditation, the iron casque of the man of war. The great sculptor has divined the mysterious cause why, among all people, among all classes, and in all epochs, the soldier is honored. Instinct teaches the people, and genius taught Michael Angelo, that among so many glorious examples, among so many immortal victims, so many illustrious martyrs or devotees of thought, illustrating an age or a country, the soldier stands forth pre-eminently, in all ages and in all countries, the victim always ready, the defender always armed, the servant, the apostle, and the martyr.

It is the Christian version of the ancient allegory which made Minerva issue from the brain of Jupiter: Minerva, or *wisdom armed*, the helmet upon her brow, the sword in her hand.

Will the foregoing paragraphs, which I have translated somewhat freely from the "Soldat" of Joachim Ambert, a work devoted to the illustration of the soldier's career, be deemed an immodest or extravagant glorification of the profession of arms? Far be it from me to exalt unduly that profession, but I would at least make a claim for it, the more necessary since popular apprehension tends to lose sight of the thinker in the man of force and of blood, that, more than any other, it embraces all sciences and all branches of human knowledge, and leads its followers into vast and diverse fields of thought. Let the illustrious dead be our witnesses; that idea which a genius of a Michael Angelo inspired and embodied in marble; that idea which the lives of a Cæsar, a Frederick, a Washington, a Napoleon, and a Wellington have justified; the union of Force and Thought finds yet another and a varied illustration in the accomplished soldier and profound thinker whose life and works we now commemorate.

RESOLUTIONS OF THE LIGHT-HOUSE BOARD.

Resolved, That the members of the Light-house Board feel most deeply the loss sustained by the branch of the public service under their charge in the death of Brevet Major General Joseph Gilbert Totten, who has been one of the most useful and active members of the board from its first appointment in pur-

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nance of law in 1851, under the Secretary of the Treasury, as a temporary board of inquiry into the light-house establishment of the United States, through all the years of organization of the establishment and of its executive duties.

Resolved, That the high scientific attainments, the admirable administrative qualities, the perfect knowledge of general principles, and attention to every minute detail of the system, impressed the mental and moral qualities of General Totten upon his associates in a way to make his mind eminently a leading one of the board, while his suavity, patience, perfect amiability, and retiring modesty rendered him one of the most charming of associates in executing work to which he was so much more than sufficient.

Resolved, That in the discharge of the duties of inquiry of the first board, the resulting organization, the adoption of the present system of lighting by lenses, the subject of construction, theoretical and practical, and the use of materials, the experience and experimental knowledge of General Totten were of the highest value to the board, and his careful application of the sciences were of the greatest importance to the light-house system; and that in the large qualities of common sense in all the transactions of the board, general as well as technical, and in his high sense of justice directing great mental power, the board constantly felt the support of General Totten as one to be relied upon for guidance in all difficult questions of administration.

Resolved, That the affectionate qualities of General Totten's heart so endeared him to his colleagues, that in now expressing themselves in regard to his death, they are fully prepared to share to the utmost the deep grief of his family, to whom they offer their sincere condolence for the loss of one not to be replaced, but to be ever mourned as the true, devoted, and sincere friend.

Resolved, That a copy of these resolutions be transmitted to the family of General Totten, and to the honorable Secretary of War, and to the honorable Secretary of the Treasury.

Resolved, That these proceedings be published in the Washington newspapers.

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JOURNAL OF PROCEEDINGS

OF

THE BOARD OF REGENTS.

WASHINGTON, *January* 16, 1867

In accordance with a resolution of the Board of Regents of the Smithsonian Institution, fixing the time of beginning of their annual session on the third Wednesday of January in each year, a meeting was called for this day.

No quorum being present, the Board adjourned to meet on Monday, January 28.

WASHINGTON, *January* 28, 1867.

A meeting of the Board of Regents was held at 8 p. m., in the laboratory of the Institution.

Present: Chief Justice Chase, Chancellor of the Institution; Hon. Garret Davis, Hon. J. W. Patterson, Hon. J. A. Garfield, General Richard Delafield, Professor Louis Agassiz, Hon. Richard Wallach, Mr. William B. Astor, and the Secretary, Professor Henry.

The Chancellor took the chair.

Professor Henry presented a general statement of the operations of the Institution during the year, and of the present condition of the funds.

He also stated that, on account of the advanced state of the session of Congress at the time of the passage of the resolution by the Board directing a memorial to be presented in regard to increasing the amount of the Smithsonian capital in the treasury of the United States, and also on account of the apprehension that a larger sum would be required for the completion of the building than was at first expected, he had deferred action until the present session of the Regents, when further instructions could be given in regard to the matter.

After remarks by the Chancellor and other members of the Board relative to the desirableness of increasing the amount in the treasury as the best means of permanently securing the capital of the Institution, and of exhibiting to the world the care and judgment with which the finances have been managed,

On motion of Mr. Wallach, the following resolution was adopted:

Resolved, That a committee of three be appointed to present a memorial to Congress in behalf of the Board of Regents, requesting the passage of an act authorizing the Treasurer of the United States to receive into the treasury, on the same terms as the original bequest, the residuary legacy of James Smithson, now in United States bonds in the hands of said Treasurer, namely, $26,210 63, together with such other sums as the Regents may from time to

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time see fit to deposit, not exceeding, with the original bequest, the sum of one million dollars; and that the income which has accrued or which may accrue from said residuary legacy be applied in the same manner as the interest on the original bequest.

The Chancellor appointed Messrs. Davis, Patterson, and Garfield as the committee.

General Delafield, from the Building Committee, made a report relative to the work done and the expenditures on the reconstruction of the building during the past year.

On motion of General Garfield, the report was accepted and the committee continued.

Professor Agassiz remarked that he had just read the report of the Librarian of Congress, in which it was stated that the addition of volumes from the Smithsonian Institution had increased the library of Congress one-third, and he wished to call attention to the source of the accumulation of so large and valuable a library as that of the Smithsonian, one of the best of the kind in the world. He attributed it to the policy which had been proposed by the Secretary, and so long sustained by the Regents, of publishing original contributions to science, and sending these, with the greatest liberality, to every part of the world, in return for which so many volumes of the transactions of learned societies had been received, and without which system of publication and exchange the present reputation of the Institution and such a library could not have been acquired.

The Secretary stated that, since the last meeting, the death had occurred of Mr. W. W. Seaton, Treasurer of the Institution and one of the original Regents.

Mr. Seaton was for many years mayor of the city of Washington, and in several of his messages recommended the councils to urge Congress to take measures for the organization of the Smithsonian Institution, and it was, finally, through his personal influence and that of others interested in the cause of science, that the law of 1846, authorizing its establishment, was passed. The mayor of Washington is ex-officio, a Regent, a provision chiefly due to the zealous interest which Mr. Seaton had manifested in the advocacy of the measure. At the first session of the Board of Regents he was appointed Chairman of the Executive Committee, a member of the Building Committee, and Disbursing Officer. At the close of his term as Regent he was elected Treasurer, which office he retained until his death, rendering gratuitous service during the whole period.

On motion of Mr. Wallach, the following resolutions were adopted:

Resolved, That the Regents of the Smithsonian Institution have learned with deep regret the decease of WILLIAM W. SEATON, late Treasurer of the Institution, who has been connected with it from its organization, and was one of the original members of the Board. His long and gratuitous services to the Institution entitled him to our thanks, and his loss, in common with the citizens of Washington and of the whole country, we deplore.

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Resolved, That a copy of this resolution be transmitted to the family of the deceased.

On motion of General Garfield, the Secretary was directed to have these resolutions, and a suitable notice of the late Mr. Seaton, inserted in the next annual report.

The Secretary stated that it would be necessary to make provision for supplying the place of Mr. Seaton, and perhaps some new arrangements in regard to the method of keeping the accounts, paying bills, &c.

The Chancellor suggested that the income of the Institution should be placed in the treasury of the United States, or in a government depository; and,

On motion, it was

Resolved, That a committee be appointed to consider the subject of the proper deposit of the income, and of any change which might be necessary in regard to the system of accounts, and report at the next meeting.

The Chancellor appointed General Delafield, General Garfield, and the Secretary as the committee.

The Board then adjourned to meet on Friday evening, at 7½ o'clock.

WASHINGTON, *February* 1, 1867.

A meeting of the Board of Regents of the Smithsonian Institution was held this day at 8 o'clock p. m. in the laboratory of the Institution.

Present: Chief Justice Chase, Chancellor; Hon. L. F. S. Foster, President of the Senate; Hon. L. Trumbull, Hon. J. W. Patterson, Hon. J. A. Garfield, Hon. J. F. Farnsworth, General R. Delafield, Professor Louis Agassiz, Hon. R. Wallach, and the Secretary, Professor Henry.

The Chancellor took the chair.

The minutes were read and approved.

The Secretary presented a petition from William De Beust, asking for remuneration for losses by the fire at the Institution.

On motion of Mr. Foster, it was

Resolved, That the Secretary be authorized to settle with William De Beust at a fair valuation for his tools lost during the fire at the Institution in January, 1865, in full payment of his claims, the amount not to exceed five hundred dollars.

The Secretary presented the following memorial which had been offered to Congress by the special committee:

MEMORIAL OF THE BOARD OF REGENTS OF THE SMITHSONIAN INSTITUTION.

To the honorable the Senate and House of Representatives in Congress assembled:

The Board of Regents of the Smithsonian Institution have directed the undersigned to transmit to your honorable body the resolution herewith appended, and to solicit the passage of an act in accordance therewith.

It is known to your honorable body that the original sum received into the United States treasury from the bequest of James Smithson, of England, was

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$515,169, which was considered a trust fund, the interest alone to be applied to carrying out the purpose of the testator, viz: "The increase and diffusion of knowledge among men."

This, however, was not the whole of the Smithsonian bequest, the sum of £5,015 sterling having been left by Hon. R. Rush, the agent of the United States, as the principal of an annuity to the mother of the nephew of Smithson.

The annuitant having died, the sum of $26,210 63 has been received from this source, and is now in charge of the Secretary of the Treasury of the United States; and no provision having been made in the act of August 10, 1846, establishing the Institution, for the disposition of this remainder of the legacy, your memorialists, in behalf of the Board of Regents, now ask that it be added to the original bequest on the same terms; and that the increase which has arisen from interest or otherwise on the sum before mentioned, also in the hands of the Treasury Department of the United States, be transferred to the Board of Regents for assisting to defray the expense of the reconstruction of the building, and for other objects of the Institution.

And your memorialists would further ask that the Board of Regents be allowed to place in the treasury of the United States, on the same terms as the original bequest, such sums of money as may accrue from savings of income and from other sources, provided the whole amount thus received into the treasury shall not exceed one million dollars.

The sole object of this request is the permanent investment and perpetual security of the entire Smithsonian bequest and such other sums as may be accumulated from savings of accrued interest, legacies, &c.

And your memorialists will ever pray, &c.

S. P. CHASE,
Chancellor.
JOSEPH HENRY,
Secretary Smithsonian Institution.

Resolved, by the Board of Regents of the Smithsonian Institution, That an application be made to Congress for an act authorizing the Treasurer of the United States to receive into the treasury, on the same terms as the original bequest, the residuary legacy of James Smithson, now in United States bonds in the hands of said Treasurer, namely, $26,210 63, together with such other sums as the Regents may from time to time see fit to deposit, not exceeding, with the original bequest, the sum of $1,000,000; and that the income which has accrued or may accrue from said residuary legacy be applied in the same manner as the interest on the original bequest.

Mr. Patterson stated that in behalf of the committee he had presented the memorial to the House of Representatives, with a bill in accordance therewith, which had passed unanimously that day, and been transmitted to the Senate.

Mr. Trumbull stated that this bill had also unanimously passed the Senate, and only awaited the signature of the President to become a law.

The subject of the future policy of the Institution in regard to the museum and the appropriation of the large hall in the second story of the building, was brought before the board by the Secretary, and remarks were made by Professor Agassiz, Mr. Patterson, General Garfield, General Delafield, the Chancellor, and the Secretary.

On motion of Mr. Patterson, it was

Resolved, That a committee be appointed to consider what will be the best use for the large room in the second story of the main building of the Institution.

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The Chancellor appointed Messrs. Trumbull, Patterson, Agassiz, and the Secretary as the committee.

General Delafield, from the special committee appointed at the last meeting in regard to the depository of the funds, reported in part, and asked for further time, which was granted.

The Board then adjourned to meet at the call of the Secretary.

FEBRUARY 22, 1867.

A meeting of the Board of Regents was held at 7 p. m., in the room of the Committee on Foreign Affairs, House of Representatives, United States Capitol.

Present: Chief Justice Chase, Chancellor, Hon. W. P. Fessenden, Hon. J. W. Patterson, Hon. J. A. Garfield, Hon. J. F. Farnsworth, Hon. R. Wallach, General R. Delafield, and Professor Henry, Secretary.

The Chancellor took the chair and the minutes were read and approved.

The Secretary stated that it had become his painful duty at this time to announce the departure from life of another and one of the most important and highly esteemed members of the Board. Since the last meeting Professor Alexander Dallas Bache, head of the United States Coast Survey and Regent of the Smithsonian Institution, had, after a protracted illness, died, on the 17th February, at Newport, Rhode Island, in the sixty-first year of his age; that though this occurrence must be felt as a sad calamity by all familiar with the progress of art, science, and education in this country for the last forty years, and by all who had been favored with a personal acquaintance with the deceased, yet he begged to be permitted to say that none, save his bereaved widow, could feel the loss more deeply than himself. He had been on terms of brotherly association with him for more than thirty years. It had been principally through the influence of Professor Bache that he had been induced to venture to accept the appointment of Secretary of this Institution, and that with the sympathy, counsel and support of the deceased, he had been enabled, through all the eventful changes which had since taken place, to continue the discharge of the responsible duties of the office.

On motion of Mr. Patterson, it was

Resolved, That the highest honor is due to the memory of our respected and beloved associate, Professor ALEXANDER DALLAS BACHE, who, through so many years of active life, has devoted, unselfishly and with untiring energy, great talents, profound acquirements, and undeviating integrity to the advance of art, science, education, and philanthropy.

Resolved, That in the death of our lamented associate, this Institution, of which he was a Regent and one of the executive committee from its first organization to the time of his death, has lost an efficient collaborator, a sagacious counsellor, and zealous supporter.

Resolved, That the members of the Board, in common with the Secretary, lament in his departure the loss of a warm and tried personal friend, and that they will always cherish the memory of his genial and sympathetic disposition, his

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gentle and prepossessing manners, his refined taste, high moral perceptions, and unswerving advocacy of the right.

Resolved, That a copy of these resolutions be transmitted to the widow of the deceased, and that the Secretary prepare a suitable eulogy for insertion in the next Annual Report.

General Delafield presented the annual report of the Executive Committee, which was read and adopted.

The Secretary presented the following copy of the act of Congress relative to the increase of the trust fund, referred to at the last meeting of the Board, and a statement of what had been done in accordance with it.

[PUBLIC—No 20.]

AN ACT authorizing the Secretary of the Treasury to receive into the treasury the residuary legacy of James Smithson, to authorize the Regents of the Smithsonian Institution to apply the income of the said legacy, and for other purposes.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That the Secretary of the Treasury be, and he is hereby, authorized and directed to receive into the treasury, on the same terms as the original bequest, the residuary legacy of James Smithson, now in United States bonds in the hands of said Secretary, namely, twenty-six thousand two hundred and ten dollars and sixty-three cents, together with such other sums as the Regents may from time to time see fit to deposit, not exceeding with the original bequest the sum of one million dollars.

SEC. 2 *And be it further enacted*, That the increase which has accrued, or which may hereafter accrue, from said residuary legacy, shall be applied by the Board of Regents of the Smithsonian Institution in the same manner as the interest on the original bequest, in accordance with the provisions of the act of August tenth, eighteen hundred and forty-six, establishing said Institution.

Approved, February 8, 1867.

The Secretary stated that in accordance with the directions of the Board of Regents, and the authority conferred by the above act, he had increased the amount of the Smithsonian fund in the treasury of the United States on the 19th of February, 1867, to $550,000, in the following manner:

The interest, at 7 3-10 per cent., due for two years, to February 15, 1867, on the $54,150 U. S. bonds, was collected, viz:		$7,905 90
$25,400 of the bonds were taken by the Treasury Department at 6 per cent. premium, yielding Bonds	$25,400	
Premium.....	1,524	
		26,924 00
Interest from 15th February to 19th, four days.....		20 32
Amount realized.....		34,850 22
Amount placed in the United States treasury, to be added to the original trust fund, $515,169, (making it $550,000)		34,831 00
Leaving a balance in cash of.....		$19 22

This balance was deposited with Riggs & Co. to the credit of the Smithsonian account.

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After discussion as to the further increase of the permanent capital,

On motion of Mr. Wallach, it was

Resolved, That the Chancellor and Secretary be directed to dispose immediately of the remaining United States 7-30 bonds, and the Indiana, Georgia, and Washington bonds, now held by the Institution, and, if possible, from the proceeds to place an additional hundred thousand dollars in the treasury of the United States.

Mr. Patterson requested further time for the committee on the future use of the large hall in the main building of the Institution, which was granted.

General Delafield presented the following report from the special committee:

REPORT ON ACCOUNTS, ETC.

The committee to whom was referred the subject of the deposit of the income, and any changes which may be advisable in the system of accounts, respectfully report that they have carefully considered the matters referred to them, and recommend as follows:

1. That the income being collected according to law, under the authority of the Chancellor and Secretary, be deposited in a national bank, which is also an authorized government depository, subject to draft, as hereinafter provided.

2. That no money be drawn from the depository except for the payment of accounts which have been examined and approved by the Secretary of the Institution, and which are in accordance with appropriations made by the Regents.

3. That all payments for bills exceeding twenty dollars, be made by separate checks, drawn by the Secretary on the depository, and that for bills of less amount, a check may be drawn for a number, as exhibited in a single statement.

4. That there be rendered quarterly to the Executive Committee, by the Secretary, an account current, accompanied by abstracts of disbursements, supported by receipted vouchers, for the expenditure of all money drawn from the depository. These vouchers to be made, as far as practicable, in accordance with the forms hereto annexed, each voucher being complete in itself, and to contain the facts and information thereon indicated.

5. That a check-book, ledger, and such other books of record as may be necessary, be kept in the office of the Secretary, so as to exhibit at any time the financial condition of the Institution. The check-book shall indicate not only the sums deposited, and drawn, but also the sources whence they were derived, and the appropriation under which they were paid.

6. That there be obtained from the depository, quarterly, an account current of receipts and expenditures, to be compared by the Executive Committee with the accounts of the Secretary.

7. That the Executive Committee make a quarterly examination of the books and accounts of the Institution, and, as usual, an Annual Report of the Board of Regents.

Respectfully submitted:

RICHARD DELAFIELD,
JAMES A. GARFIELD,
JOSEPH HENRY,
Committee

FEBRUARY 22, 1867.

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On motion, the report was adopted.

Professor Henry announced the death of two gentlemen who had long been identified with the Institution in connection with explorations and collections in natural history, Robert Kennicott, esq, of Illinois, and Dr. Henry Bryant, of Massachusetts.

On motion of Mr. Wallach, the following resolutions were adopted:

Resolved, That the Board of Regents have heard with deep regret of the death of Mr. ROBERT KENNICOTT and Dr. HENRY BRYANT, gentlemen so long associated with the Institution in its system of explorations and collections relative to natural history, and that it tenders to the families and friends of the deceased their heartfelt condolence in their loss.

The Secretary presented the usual account of the operations of the Institution for the year 1866, which was accepted, and, on motion of Mr. Wallach, it was

Resolved, That the Secretary communicate the annual report of the Board of Regents to Congress.

The Board then adjourned *sine die*.

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SKETCH OF THE SERVICES OF THE LATE HON. W. W. SEATON IN CONNECTION WITH THE SMITHSONIAN INSTITUTION, AND SOME NOTICES OF HIS LIFE AND PERSONAL CHARACTER.

AMONG the many friends and enlightened advocates of the Smithsonian Institution, as at present established, none has been more constant and more efficient than the distinguished and lamented citizen to whose memory the following brief and imperfect notices are dedicated. These notices are designed, in the first place, to convey some idea of the character and value of his services in connection with the above-named establishment, as well by his co-operation in securing for it as prompt and suitable a commencement as the circumstances of the time permitted, as by sustaining eventually that plan of organization which corresponded most nearly with the terms and spirit of the bequest to which it owes its existence. He is to be remembered also as a benefactor of the Institution by his gratuitous and faithful discharge, for a series of years, of one of its most responsible executive offices.

As is well known, the Smithson fund, paid into the treasury of the United States in 1838, had been, with other moneys, lent by the government to the State of Arkansas, and remained for eight years without appropriation to any object contemplated by the donor. In 1846 Mr. Seaton, being then mayor of Washington, and surpassed by no one in zeal for the public good and in the influence due to his rare social qualities, his known integrity, and peculiarly winning and unaffected eloquence, united with other gentlemen of like feelings in urging upon Congress the organization of an establishment which should at length do justice to the benevolent and far-sighted views which had dictated the bequest. Their labors, after much opposition, were finally crowned with success; the good faith of the country was redeemed by an unconditional assumption of the debt incurred by the improper disposition of the fund, which was now declared to be a permanent deposit in the treasury of the United States for the objects of the trust, while interest also was allowed upon the money from the time of its receipt in this country. The Institution, organized in accordance with these resolutions, was placed under the guardianship of fifteen regents, among whom was included the mayor of the city of Washington, a provision chiefly due to the zealous interest which had been manifested by Mr. Seaton in his enlightened advocacy of the enterprise.

At the first meeting of the Board of Regents he was elected treasurer, and subsequently one of the building committee. The former office he continued to hold until the time of his death, and during the whole of this period, nearly twenty years, discharged its duties without other compensation than the pleasure he derived from an association with the Institution and the laudable pride he felt in

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contributing to its prosperity and usefulness. It is well known that at the time of the organization of the Institution a wide diversity of opinion existed as to the practical means which would be most suitable for realizing the objects of the legacy. Mr. Seaton, on mature reflection, finally gave his cordial support to the policy which sought to impress upon the Institution a truly cosmopolitan character. He strenuously advocated the plan which the Secretary, then recently elected, had been invited to submit to the Board of Regents, and which looked to the advancement of knowledge chiefly through the encouragement and publication of original researches, a system which, without neglecting other available means for the promotion and diffusion of scientific enlightenment, may be claimed, without undue pretension, to have made the Institution favorably known, and to have exerted a well-recognized influence wherever men occupy themselves with intellectual pursuits.

The relation borne by Mr. Seaton to the city of Washington, the delight with which he watched and aided its progress, a certain native taste also for artistic embellishment, led him to take special interest in the architectural character of the Smithsonian building and the ornamentation of the public grounds around it.

Mr. Seaton was a constant attendant at the meetings of the Board of Regents, and from his familiarity with the early history of the Institution and the state of the funds, as well as from his long experience in public office, was enabled to offer suggestions, always marked by clearness of conception and soundness of judgment. The social attentions which he was accustomed to extend to the regents, especially those who were called from abroad to attend the annual meetings, and to gentlemen invited to lecture before the Institution, were but the expression of his characteristic hospitality; but by thus adding to the pleasure of their sojourn in Washington, he contributed largely to increase the number of its friends and supporters. The columns of the National Intelligencer, under his direction, were always open to the defence of the policy adopted and the course pursued by the Institution, and he rarely failed to soften by the courtesy of his manner and the moderation of his expressions, any irritable feeling which might arise in the discussion of conflicting opinions. It would, indeed, be difficult to say in how many and in what various ways he contributed to the popularity as well as to the true interests of the Institution. The Secretary, who was in the habit of conferring with him on all points requiring mature deliberation, may with justice acknowledge that he never failed to derive important assistance from the wisdom of his counsels.

Of a man so highly honored and, what in his case is a more distinctive phrase, so greatly beloved by his fellow-citizens, the following biographical account, gethered from a communication kindly furnished us by an esteemed correspondent, will prove, we are confident, neither uninteresting nor uninstructive. It will evince that his eminence was won not less by diligence in the pursuit of a useful and laborious profession than by the graces of his personal character; not less by his unwavering adhesion to principle and duty, than by the flexibility with which he knew how to adapt himself to all the classes of men with whom his varied life brought him into contact.

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He was a descendant in the direct line of a family of no little note in the annals of Scotland. But however famed for wisdom in council and valor in the field, the Seatons had for centuries been scarcely less distinguished for an unfaltering attachment to the royal house. Hence, when the government of the revolution of 1688 was finally established, Mr. Henry Seaton, with a number of other Scotch gentlemen, despairing of any retrieval of the fallen cause of the Stuarts, was led to cross the ocean and seek a new home and new fortunes on the hospitable soil of colonial Virginia. It was in King William county, Virginia, that William Winston Seaton, a lineal descendant of Henry Seaton, first saw the light, January 11, 1785. His mother bore the name of Winston, a family originally from Yorkshire, in England, but long settled in Virginia, where it has always enjoyed great social consideration and influence. Mr. Seaton's early training was under the roof of his father, Mr. Augustine Seaton, at a time when the state of society may be said to have been peculiarly conducive to the formation of habits of self-reliance, independent thought, and a scrupulous regard for the feelings of others. To the love of study he added the love of the chase, a taste which accompanied him through life, and which, exacting robust exercise and steadiness of aim, seemed to have left its impress on his figure and action when he had reached the age of more than fourscore years. In the days to which we now refer, schools and colleges were not always at hand; books were not strewn broadcast through the country; the library, which existed as an heirloom of some old family, was such as they had brought with them from the Old World, received only rare accessions, and afforded none of those helps to easy knowledge which have perhaps extenuated our mental culture in the same proportion that they have extended it. If any special source of the love of letters, the refined taste, and varied acquirements which so highly distinguished Mr. Seaton might be pointed out, perhaps it would be found in the influence exerted on his opening mind by a Scotch gentleman then living as a refugee in Virginia, the well known Ogilvie, earl of Finlater, of whom few persons living at that day had not something to tell, as well respecting his eccentricities as his diversified accomplishments. But the mind on which these various influences acted was in itself well disposed for vigorous and independent exertion. At the early age of seventeen young Seaton was already prepared to enter on the business of life, and having adopted political journalism as his future pursuit, he gave it his constant services to the close; with how high and just a reputation for editorial equity, skilful management, and fulness of information, is well known to all who have been observers of the public events of our time.

After acting for some time as assistant editor of a Richmond paper, he passed, not without the prestige of early developed talent and force of character, to the sole management of the Petersburg Republican, and subsequently to that of the North Carolina Journal, of Halifax. Both Virginia and "the Old North State" were then peculiarly agitated by the passions and turbulence of political partisanship; the position of editor was not only environed with difficulties, but attended with danger. Mr. Seaton, with a diffidence which was always charac-

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teristic, had at first hesitated to accept a post on which so much depended for his party, but every one who knew him will believe that when he had consented to lead the attack on the stronghold of federalism at Halifax, he brought to the service precisely those qualities which were requisite for its success—firmness of purpose, consistency of principle, courtesy to opponents, fairness as well as force in discussion. It is claimed for him in fact that mainly through his well directed exertions the reign of federalism was subverted in that part of the State where he labored, and the ascendency fully transferred to those rules of constitutional construction which were then known alike by the name of *democratic* and *republican*.

We next find Mr. Seaton, scarcely twenty years of age, established at Raleigh, and associated with Joseph Gales, senior, in the editorship of the Register, the most influential journal of the State. It was in the family of Mr. Gales that two incidents bearing with the most important results on the future career and welfare of Mr. Seaton occurred. It was here that he met with the late Joseph Gales, junior, son of the former, with whom he was destined to maintain in the sequel an editorial connection of nearly fifty years, a connection which has inseparably associated their names, and whose fruits, as embodied in the columns of the National Intelligencer, will ever constitute an invaluable monument of the history and policy of their times. It was in the bosom of the same family also that the crowning happiness of his life was realized, in his union with Miss Sarah Gales, daughter of his editorial chief, and sister, therefore, of his future associate. "To refrain on this occasion from drawing aside for a moment the veil which covers the sanctity of domestic life, would be to omit the most interesting and graceful chapter of Mr. Seaton's personal history. His union with the honored partner of his life was marked by a mutual tenderness so seldom paralleled, by a devotion so chivalrous on the one part, a reliance so trustful and unhesitating on the other, that it must ever be referred to as the crown and complement of his earthly existence. The loveliness and good report of this conjugal example were treasured, it may be said, as a personal pride and possession by the community in which, for fifty-four years, the virtues, the talents, the ineffable grace of true womanhood, as exhibited in the person of Mrs. Seaton, sustained and cheered the toils of her husband in his arduous career."

In the mean time, Joseph Gales the younger had been forming himself, under the skilful guidance of his father, for the duties of a profession in which he was destined to attain an eminence that few have approached, and eventually became the proprietor of the National Intelligencer, then established at Washington. In this enterprise he was subsequently joined by his brother-in-law, Mr. Seaton, nor at the time of his accession did their united talents want for occupation in the exasperated state of party feeling and the imperilled condition of the country. It was in 1812, and hostilities had already been declared against Great Britain. Without entering into the questions which then convulsed the public mind, it is sufficient to say that the Intelligencer gave its earnest and able support to the party which regarded the declaration of war necessary to maintain

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the power and secure the rights of the United States. In this state of things it was not likely that either of our editors would confine his efforts in behalf of the cause he had espoused to the labors of the pen and press; they were both members of volunteer corps, and shared in the expeditions which were organized, from time to time, to repress the predatory incursions of the enemy. But the labors of the pen and press were, in their case, felt to be of too much national importance to be dispensed with, and a furlough granted alternately to one and the other editor, provided for the uninterrupted appearance of the sheet to which the public chiefly looked for authentic information and the vindication of governmental measures. Mr. Seaton was at the editorial post on the morning of the memorable 24th of August, 1814, when the report of the distant gun told too surely that the enemy was advancing in force on the ill-prepared metropolis. Hastily despatching his workmen to their respective corps, Mr. Seaton himself hurried to the front and arrived in time to take part in the sharp initiative conflict which preceded the disasters brought on the American arms by incapacity or want of concert on the part of the leaders and the consequent disorganization of an untrained and badly armed militia. The rout of Bladensburg led the enemy directly into the city, and the results of the occupation, as regards the destruction of the public buildings, are matters of familiar history. It is not perhaps so generally known that a singular attestation was, at the same time, unintentionally afforded by Admiral Cockburn to the widespread fame and commanding influence of the National Intelligencer. He caused the office of its publication to be sacked and its valuable contents to be destroyed; too many incitations to patriotic effort had issued from that sanctuary to escape an ignoble vengeance.

It has been seen that the course of Mr. Seaton's life, from a period little advanced beyond boyhood, was such as to insure, indeed to necessitate, an intimate familiarity with the men and events of his time, with all changes of public opinion, with all discussions of constitutional law, with all the movements of interest, prejudice and affection by which the affairs of the world are governed. The thoughts, the passions, the motives of his fellow-men were necessarily with him subjects of scrutinizing observation and intelligent reflection. When he removed to Washington the sphere of his observation and influence was of course greatly widened. The trusted friend and counsellor of the earlier administrations, there can be no doubt that, as he was the depositary of their confidence, he often contributed in no small degree to shape their measures. The intimate and honored associate afterwards of such men as Adams, Webster, Clay, Calhoun, Berrien, and all the eminent statesmen of the past age, he could scarcely fail, with his quick and penetrating intelligence, to gain such insight into public affairs and to gather such stores of varied information as are rarely within reach of a single mind. To him, therefore, would naturally resort politicians and statesmen of every cast; for it was instinctively felt that in consultation with him there was a candor which knew no disguise, a courtesy which never failed, a fulness of information and clearness of judgment which his intrinsic goodness of heart placed at the service of all who needed them. The

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same would be the case with the representatives of foreign governments, and with all enlightened strangers, and thus his influence was often propagated to other countries than his own. But this subject has been so graphically, if quaintly, touched by a contemporary journalist that we cannot do better than use his words: "There is a parlor in Colonel Seaton's old house at Washington," says this writer, "which, could its walls speak, would be more eloquent than the walls of any other apartment in America. In that well-known room it was not uncommon—we should rather say it was for years a weekly custom—for the greatest men in the country, and the representatives of other nations, to gather in the freedom of social intercourse. And this may be said with undoubted truth, that in those free social conversations and exchanges of thought were born many of the great measures of government which added lustre to the American name, so that that room may be regarded as the birthplace of much of our national glory."

After having filled successive municipal offices, Mr. Seaton, in 1840, yielded to solicitations which had been often resisted, and accepted from the citizens of Washington the dignity of the mayoralty, the highest which, under the public law, it has ever been in their power to confer. During the succeeding ten years, in which he was uninterruptedly recalled with unprecedented unanimity to preside over the affairs of the city, it is superfluous to say that he brought to the discharge of his duties a fidelity and energy which distinguished him in all situations, and which have stamped his administration as a model worthy of imitation by all civic dignitaries. It would seem indeed to have rested only with himself to fill the office to perpetuity, for when, at the end of the above period, he peremptorily declined a re-election on the score of advancing years, his retirement was regarded by all with undissembled regret. Nor is this matter of surprise; for if, in the unswerving discharge of duty, he had evinced an impartiality and firmness worthy of honor, he had still more won the popular heart by personal qualities which appealed to the sensibilities of all the good and all the suffering. Accessible to all classes, listening with patient sympathy to the story of need or wrong, which was ever promptly relieved or redressed, tenderly considerate of the humble and poor, his charity a household word wherever he was known, he called forth a respect and love not accorded to the many, and at last descended to the grave crowned by the blessings of those to whom the withdrawal of his earthly presence seemed little less than a domestic calamity.

One point only in Mr. Seaton's municipal administration is it thought needful here to particularize; his persistent efforts in the establishment of the present admirable system of public schools in Washington. A just tribute to his important work in behalf of education has been thus rendered by a municipal colleague: "When Mr. Seaton entered upon the duties of the mayoralty there were only two public schools in the city; but justly estimating the value of a new and improved system, he continued from year to year to press the subject on the attention of the legislative branches of the government, until it was adopted in the fourth year of his administration, from which time the number

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of schools has increased until their scholars now amount to twice as many thousands as there were hundreds at the time of his inauguration. Among the many beneficent acts of his official life this will stand pre-eminent; and among the many friends in whose hearts his memory will be longest cherished, there will be thousands who, but for his efforts, would have been denied the blessings of education, and the manifold benefits resulting from that mental and moral culture which the children of all classes of our fellow-citizens have since enjoyed by means of the liberal and enlightened system he so opportunely introduced and established."

This rapid sketch would be culpably deficient did we not endeavor to convey some idea of the rare personal gifts and virtues of Mr. Seaton, in the sphere where they naturally shone with a more benign lustre—his home; and this we prefer to do in the words of one who knew and loved him well: "The centre of all household thought; obeyed by his inferiors with a service of love recalling a patriarchal age; it was at home, in the daily amenities of domestic and social life, that he was supreme. Who can forget Mr. Seaton as host? In the gatherings about his generous board mingled the cordial welcome and that air of an older and better school which constantly distinguished him—the kindly and reassuring attention, unaffectedly bestowed on the least distinguished guest, the colloquial charm, which extended the fame of his hospitality far beyond the sphere of its exercise. His conversation was indeed of an exalted character, lighted up by a quaint humor and ready wit, enriched with varied and solid information derived alike from men and books, marked also by originality of thought, by an utter absence of self-assertion or dogmatism, by a delicate tact in shielding others from the wound which a thoughtless or unkind word might inflict, and in drawing forth to the best advantage the talents and attainments of each. Doubtless, no unimportant part of the charm exercised by Mr. Seaton resided in his engaging presence—in the winning smile, the bright eye, the gentle voice, the benignity of a countenance upon which a long life of manly effort and kindly purpose had left its impress. In recalling these characteristics some idea may be conveyed of an attractiveness which was not only widely recognized among ourselves, but acknowledged by foreigners, especially the diplomatic representatives of other governments, solicitous of obtaining from his lips an explanation of our involved politics and those views of public measures which have been known on several noted occasions to have materially influenced the deliberations of foreign cabinets and determined their international policy."

We know not how we can better close this account of the life and character of a lamented colleague than by quoting the following passage from a discourse delivered on the occasion of his death: "One of the finest intellects of this country, and of the most devout, almost austere, evangelical faith, has repeatedly said, 'that of all the men he had ever known Mr. Seaton was nearest perfection and most ready to enter God's presence.' One of the texts on which the deceased sometimes dwelt as being to him exceedingly suggestive was, 'As a man *thinketh* so *is* he;' and this might be termed the key-note to his own character; without guile, trusting all, believing in all, his wide mantle

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of charity and love covering all creeds, all humanity, his was truly 'the spirit which thinketh no evil.' One of his most striking characteristics was the indomitable courage which, through life and to its extremest verge, led him to brave difficulties and adversities with the same calm, unflinching decision with which he confronted personal danger, and which enabled him to endure, with unsurpassed fortitude, the sufferings of mortal illness. Self-reliant, self-poised, upheld by his consciousness of right and just endeavor, firm in his grasp of the immutable principles of truth, and in his reliance upon a gracious and superintending Providence, his life was guided by a sense of responsibility as a free moral agent, from whom a strict account of the talents committed to his charge was hereafter to be exacted. He was constant and fervent in prayer. Often, months before, and during his illness, his voice was heard in the stillness of night raised in petition to God. His last words on earth, the last tones of his voice vibrated with the name of the Saviour. He was a 'devout Christian; exalted honor his instinct, Christianity his guide.'"

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JOURNAL OF PROCEEDINGS

OF

THE BOARD OF REGENTS.

WASHINGTON, *January* 15, 1868.

In accordance with a resolution of the Board of Regents of the Smithsonian Institution, fixing the time of beginning of the annual session on the third Wednesday of January in each year, a meeting was called for this day. Present, Hon. J. V. L. Pruyn, General Richard Delafield, Professor L. Agassiz, Hon. Peter Parker, and Professor Henry, the Secretary.

The Secretary presented the following joint resolution of the Senate and House of Representatives of the United States:

[PUBLIC RESOLUTION No. 5.]

A RESOLUTION for the appointment of Regents of the Smithsonian Institution.

Resolved by the Senate and House of Representatives of the United States of America in Congress assembled, That the vacancies in the Board of Regents of the Smithsonian Institution of the class "other than members of Congress" be filled by the appointment of Theodore D. Woolsey, of Connecticut, William B. Astor, of New York, John Maclean, of New Jersey, and Peter Parker, of the city of Washington.

Approved, January 11, 1868.

The Secretary stated that on the 7th of January the Speaker of the House of Representatives had appointed the following Regents: Hon. J. A. Garfield of Ohio, Hon. L. P. Poland of Vermont, and Hon. J. V. L. Pruyn of New York.

No quorum being present, the Board, after examining the building and collections, adjourned to meet on Wednesday evening, January 22, 1868, at 7½ o'clock.

WASHINGTON, *January* 22, 1868.

A meeting of the Board of Regents was held at 7½ o'clock p. m. in the Regents' room of the Smithsonian Institution. Present, Hon. B. F. Wade, Hon. R. Wallach, Hon. L. Trumbull, Hon. G. Davis, Hon. J. A. Garfield, Hon. L. P. Poland, Hon. J. V. L. Pruyn, Prof. L. Agassiz, Rev. Dr. John Maclean, General Richard Delafield, Hon. Peter Parker, and Professor Henry, the Secretary.

Mr. Wade was called to the chair. The minutes of the last meeting were read and approved.

The Secretary stated that a vacancy existed in the Executive Committee, on account of the death of Professor Bache.

On motion it was

Resolved, That Hon. Peter Parker be elected to fill the vacancy in the Executive Committee.

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The Secretary made a statement relative to the finances of the Institution, the sale of the State stocks, etc.

Gen. Delafield, on the part of the Executive Committee, presented the annual account of receipts and expenditures for 1867, and stated that a detailed report would be submitted at a future meeting.

The Secretary presented a statement in regard to international exchanges of literary, scientific and government publications. The act of Congress, passed at the last session, directing that 50 copies of every government publication should be given to the Smithsonian Institution to be exchanged for the publications of foreign governments, had not been carried out, as the public printer did not consider that the act referred to authorized the printing of extra copies of the works, and all the regular edition was already disposed of according to existing laws. Further legislation was therefore required.

Mr. Pruyn stated that the subject had been referred to the Library Committee of Congress, of which he was a member, and that he would do all in his power to promote the object desired.

Professor Agassiz, from the committee appointed at the meeting of February 1, 1867, presented a report, which, on motion of Mr. Wallach, was accepted.

After remarks by several Regents, on motion of Mr. Poland, the report was laid on the table and made the special order for the next meeting.

On motion of General Garfield the report was ordered to be printed.

The Board then adjourned to meet on Monday evening, January 27, 1868.

WASHINGTON, *January* 27, 1868.

A meeting of the Board of Regents of the Smithsonian Institution was held at 7½ o'clock p. m., in the Regents' room. Present, Chief Justice Chase, (the Chancellor,) Hon. B. F. Wade, Hon. Richard Wallach, Hon. J. A. Garfield, Hon. L. P. Poland, Hon. J. V. L. Pruyn, Professor Agassiz, Hon. Peter Parker, and Professor Henry, the Secretary.

The Chancellor took the chair, and the minutes of the last meeting were read and approved.

The Secretary presented the report for the year 1867.

Professor Agassiz presented a printed and revised copy of the report of the special committee on the use of the new room, made at the last meeting, which was read as follows:

Report of the committee appointed to consider what will be the best use for the large room in the second story of the main building of the Smithsonian Institution.

The influence the Smithsonian Institution has exercised from its origin upon the progress of science in the United States has been so marked and so deep, that in considering any step connected with the organization of the Institution, it is of the utmost importance to keep in view its bearing upon the advancement of knowledge generally. To those not familiar with the active operations of the Institution, the growing recognition of the difference between the increase and diffusion of knowledge, and the consequent establishment by Congress of a National Academy, mainly organized for the purpose of enlarging the boundaries

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of science among us, are in themselves sufficient evidence of its beneficent power. The large and unique library lately transferred from the Institution to the library of Congress, and the extended intercourse between the Institution and all the learned bodies scattered over the globe, bear equally impressive testimony to the wide-spread action of the Institution.

In attempting to determine the most appropriate use to which the large building of the Smithsonian, and especially the large unappropriated hall in the second story, may be put, your committee has been led to consider the probable course the Institution may follow whenever its resources become consolidated and its means, gradually freed from their temporary application to subordinate purposes, are exclusively devoted to the special object pointed out in the will of Smithson, viz: "the increase and diffusion of knowledge among men." The policy which has led to the transfer of the Smithsonian library to that of Congress suggests the propriety of severing also the museum from the Smithsonian Institution, inasmuch as a museum is no more contemplated by the will of Smithson than a library. The accumulation of books and specimens has been a natural consequence of the organization of an institution exclusively devoted to the fostering of intellectual pursuits. But in proportion as their number increased they claimed a larger and larger part of the attention and means of the Institution until it became a matter of serious consideration how far the possession of such objects should be embraced in its general plan and scope.

As far as the library is concerned the question has been settled. It has become evident that, in consequence of the judicious distributing of its published contributions and miscellaneous works, the Smithsonian has acquired the most complete collection of learned transactions in existence; so extensive, indeed, that its preservation and natural extension would have encroached upon the specified obligations of the Institution. The disposition made of it leaves the students of science in the fullest enjoyment of this invaluable store of information, while it relieves the Smithsonian of a serious burden. Now your committee is satisfied that the museum of natural history, and the other collections preserved in the Smithsonian, stand in precisely the same relation to the Institution as the library did, and that it may be equally desirable to give them up, and with them the largest part if not the whole of the building, could this be done without injury to the collections and to the cause of natural history. However, it does not appear advisable to adopt such a course immediately; but it seems wise to keep it in view as a probability, doing meanwhile whatever is most likely to contribute to the advancement of science.

A few facts concerning the operations of the Institution should be borne in mind in this connection. In the same manner as the Smithsonian has distributed its various publications broadcast among learned institutions and individual scientific men, and obtained in return the magnificent library above alluded to, it has also distributed an immense number of specimens, and fostered in this way scientific research both at home and abroad. But for these latter contributions scattered over the whole civilized world it has neither claimed nor received adequate returns. All the duplicates of these treasures obtained at home from the various government exploring expeditions and surveys have been given away with

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the understanding that the time may come when the progress of science among us would make it desirable that returns in kind should be expected.

The Smithsonian Institution has now been in operation for twenty years. In acknowledgment of its published Contributions to Knowledge it has received the splendid library which now adorns the Congressional library. Is it not time that the rights accrued in consequence of the distribution of specimens by the Insti tution should be called in; that this great outstanding debt, as it may well be called, should be collected before the recipients of these manifold gifts have passed away, and the benefits thus conferred by the Smithsonian are altogether forgotten; when the Institution might find it difficult to obtain, without new offerings, that which at this moment it may claim as its due?

Should this Board approve the recommendation of this committee, no time ought to be lost in giving notice to all the various institutions with which the Smithsonian is in regular correspondence, that this is henceforth to be the regular policy of the Institution. On the other hand it is indispensable that we should make the necessary preparations for receiving these objects, and also determine beforehand the ultimate destination of the extensive collections which no doubt will flow in as soon as we are prepared to take care of them. Your committee is of opinion that the great hall in the second story of the building should be used for the reception of these collections, and the smaller rooms in the towers, as far as not needed for other purposes, as laboratories to identify, arrange, classify, and distribute these collections for the greatest advantage of science among us, until suitable arrangements can be made for the organization of a great national museum, to which the whole should in the end be transferred.

It is self-evident that the collections likely to come in will soon outgrow the capacity of the Smithsonian Institution and its ability to take care of them, without applying its income to objects for which it was not intended. But the difficulty of disposing of these scientific treasures is no sufficient ground why the Smithsonian should surrender its large claims on other scientific institutions; for, in so doing, it would simply deprive the country of scientific objects, which other museums would be glad to receive should the Smithsonian be obliged to give them up before the country demands and organizes a great national museum in Washington.

To sum up these remarks, your committee recommends—

1st. That the distribution of specimens carried on by the Smithsonian Institution be continued and extended, but that at the same time proper returns be required whenever the specimens are not given out in aid of original researches or for educational purposes.

2d. That the expenses for such operations be limited to the resources especially appropriated for the purpose, and not allowed to encroach upon the regular active operations of the Institution.

3d. That the great hall of the second story of the building, and such other rooms as are not required for the regular operations of the institution, be devoted to the preservation of the scientific collections.

All of which is respectfully submitted in behalf of the committee.

L. AGASSIZ.

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On motion of Mr. Garfield, after remarks by Messrs. Pruyn, Agassiz, Chase, Wade, Parker, Wallach, Garfield, and the Secretary, the recommendations of the committee, after modification, were adopted unanimously, as follows:

1st. That the distribution of specimens carried on by the Smithsonian Institution be continued and extended, but that at the same time proper returns for the past as well as for the future be required, whenever the specimens are not given out in aid of original researches or for educational purposes.

2d. That the expenses for such operations be limited to the resources specially appropriated by Congress for the purpose, and not allowed to encroach upon the regular active operations of the Institution.

3d. That the great hall of the second story of the building, and such other rooms as are not required for the regular operations of the Institution, be devoted to the preservation of the scientific collections.

On motion of Mr. Garfield, the following resolution was adopted:

Resolved, That a committee be appointed to report to the Regents, at their next meeting, what amount of appropriation should be asked of Congress for the care of the museum and for fitting up the great hall for the safe-keeping and exhibition of specimens.

Messrs. Wade, Garfield, Pruyn, Poland, and the Secretary were appointed as the committee.

The Board adjourned to meet at the call of the Secretary.

WEDNESDAY, *April* 15, 1868.

Present, Chief Justice Chase, (the Chancellor,) Hon. R. Wallach, General R. Delafield, Hon. Peter Parker, and Professor Henry, the Secretary.

No quorum being present the Board adjourned to meet on the 22d instant at 7 p. m.

WEDNESDAY, *April* 22, 1868.

A meeting of the Board of Regents was held this day in the Regents' room, at 7 o'clock p. m. Present, Chief Justice Chase, (the Chancellor,) Hon. B. F. Wade, Hon. Lyman Trumbull, Hon. Garret Davis, Hon. J. A. Garfield, Hon. J. V. L. Pruyn, General R. Delafield, Hon. Peter Parker, and Professor Henry, the Secretary.

The Chancellor took the chair, and the minutes of the last meeting were read and approved.

General Delafield presented the report of the Executive Committee for the year 1867, which was read and approved.

General Delafield presented the report of the Building Committee for the year 1867, which was read and approved.

The Secretary made a statement relative to the facilities afforded by various steamship and railroad companies in conveying the packages of the Institution free of freight.

On motion of Mr. Trumbull, the following resolutions were adopted:

Whereas the Pacific Mail Steamship Company, North German Lloyd, Hamburg American Steamship Company, General Trans-Atlantic Steamship Company, Inman line of steamers, Cunard line of steamers, Pacific Steam Naviga-

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tion Company, Panama Railroad Company, and California and Mexico Steamship Company have generously aided in advancing the objects of the Smithsonian Institution and the promotion of science by the facilities they have afforded in the transportation of books, specimens, etc., free of charge: Therefore,

Resolved, That the thanks of the Board of Regents of the Smithsonian Institution are hereby given to the directors and officers of the above-named companies for this liberal and enlightened action.

Resolved, That a copy of these resolutions be transmitted by the Secretary to each of the companies.

Professor Henry submitted a statement as to the proposed researches and publications during the present year.

Hon. Mr. Parker stated that the city councils had under consideration the ceding of the canal, which bounds the Smithsonian grounds to the north, to a private company, and as this might affect the interests of the Institution he thought some action should be taken in regard to it.

On motion of General Garfield, it was

Resolved, That the Executive Committee be instructed to ascertain what measures are proposed to be taken by the city authorities of Washington in regard to the canal, so far as concerns the Smithsonian Institution.

The Chancellor called attention to the fact that a committee was appointed at the last meeting to prepare estimates for the completion of the large hall and for obtaining an adequate appropriation from Congress for the care of the government collections, and expressed the desire that this committee should act immediately in regard to the matter.

The Secretary, on behalf of the committee, stated that on consultation with the architect it was thought that $50,000 would be required for finishing the large room and supplying it with cases, and that at least $10,000 annually ought to be appropriated for the care of the museum. Whereupon it was

Resolved, That a memorial be presented to Congress asking appropriations in accordance with the report of the committee.

The Secretary gave an account of the establishment of a scientific society in Egypt publishing valuable transactions which had been received by the Institution.

The Board then adjourned to meet on Friday, May 1, at 7 o'clock p. m.

FRIDAY, *May* 1, 1868.

A meeting of the Board of Regents was held this day at 7 o'clock p. m. Present, Chief Justice Chase, (the Chancellor,) Hon. B. F. Wade, Hon. Lyman Trumbull, Hon. L. P. Poland, Hon. J. V. L. Pruyn, Hon. Richard Wallach, General R. Delafield, Hon. Peter Parker, Rev. Dr. John Maclean, and Professor Henry, the Secretary.

The Chancellor took the chair, and the minutes of the last meeting were read and approved.

General Delafield, from the Executive Committee, reported that he had collected a large amount of information in relation to the canal, (bounding the Smithsonian grounds,) but was not yet ready to make a report.

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The Secretary read a copy of the memorial which had been prepared in accordance with the directions of the Board, signed by the Chancellor and Secretary, and presented to Congress,* as follows:

To the honorable the Senate and House of Representatives in Congress assembled:

In behalf of the Board of Regents of the Smithsonian Institution, the undersigned beg leave respectfully to submit to your honorable body the following statement, and to solicit such action in regard to it as may be deemed just and proper:

The act of Congress organizing the Institution ordered the erection of a building which should accommodate, on a liberal scale, besides a library and a gallery of art, a museum, consisting of all the specimens of natural history, geology, and art, which then belonged to the government, or which might thereafter come into its possession by exchange or otherwise. Although the majority of the Regents did not consider the maintenance of these objects to be in accordance with the intention of Smithson, as inferred from a strict interpretation of the terms of his will, yet in obedience to the commands of Congress they proceeded to erect a building of the necessary dimensions, and to take charge of the government collections.

The erection and maintenance of so large and expensive an edifice, involving an outlay of $450,000, and the charge of the government museum, have proved a grievous burden on the Institution, increasing from year to year, which, had not its effects been counteracted by a judicious management of the funds, would have paralyzed the legitimate operations of the establishment, and frustrated the evident intention of Smithson.

It is true that Congress, at the time the specimens were transferred to the Institution, granted an appropriation of $4,000 for their care and preservation, that being the equivalent of the estimated cost of the maintenance of these collections in the Patent Office, where they had previously been exhibited. But this sum, from the rise in prices and the expansion of the museum by the specimens obtained from about fifty exploring expeditions ordered by Congress, scarcely more than defrays, at the present time, one-third of the annual expense. In this estimate no account is taken of the rent of the part of the building devoted to the museum of the government, which, at a moderate estimate, would be $20,000 per annum.

Besides the large expenditure which has already been made on the building, at least $50,000 more will be required to finish the large hall in the second story, necessary for the full display of the specimens of the government. But the Regents do not think it judicious further to embarrass the active operations for several years to come, by devoting a large part of the income to this object, and have, therefore, concluded to allow this room to remain unfinished until other means are provided for completing it.

It is not by its castellated building nor the exhibition of the museum of the government that the Institution has achieved its present reputation, nor by the collection and display of material objects of any kind that it has vindicated the intelligence and good faith of the government in the administration of the trust; it is by its explorations, its researches, its publications, its distribution of specimens and its exchanges, constituting it an active, living organization, that it has rendered itself favorably known in every part of the civilized world, has made contributions to almost every branch of science, and brought more than ever before into intimate and friendly relations the Old and the New Worlds.

A central museum for a complete representation of the natural products of America, with such foreign specimens as may be required for comparison and generalization, is of great importance, particularly as a means of developing

* May 1.—In the House of Representatives.—Referred to the Committee on Appropriations and ordered to be printed.

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and illustrating our industrial resources, as well as of facilitating the study of the relations of our geology, mineralogy, flora and fauna, to those of the Old World. But the benefit of such an establishment is principally confined to this country, and does not partake of the cosmopolitan character of an institution such as Smithson intended to found, and therefore ought not to be supported from his bequest.

The Board of Regents are confident that upon a full consideration of the case, your honorable body will grant an adequate support for the collections of the government, and also an appropriation for finishing the repairs of the building, and eventually, when the financial condition of the country will permit, for the independent maintenance of a national museum.

It may not be improper, in addition to what has been said, to recall the fact that the Smithsonian Institution has transferred, without cost, to the library of Congress, one of the most valuable and complete collections of the transactions of scientific and learned societies and serial publications in existence, consisting of at least 50,000 works, which, with the annual continuations of the same series, must render Washington a centre of scientific knowledge, and the library itself worthy of the nation; and that it has also presented to the government its valuable collection of specimens of art, illustrating the history of engraving from the earliest periods. It is prepared to render a similar service to a national museum, by the exchanges from foreign museums to which it has been a liberal contributor, and which may be obtained as soon as means are provided for their transportation and accommodation.

It may also be mentioned that the Institution has rendered important service to the government through the scientific investigations it has made in connection with the operations of the different departments, and it is not too much to say that, through the labors of its officers, it has been the means of saving millions of dollars to the national treasury.

In conclusion, your memorialists beg leave to represent, on behalf of the Board of Regents, that the usual annual appropriation of $4,000 is wholly inadequate to the cost of preparing, preserving, and exhibiting the specimens, the actual expenditure for that purpose in 1867 having been over $12,000; and they take the liberty of respectfully urging on your honorable body the expediency of increasing it to $10,000, and that a further sum of $25,000 be appropriated at this session of Congress towards the completion of the hall required for the government collections.

And your memorialists will ever pray, &c.

S. P. CHASE,
Chancellor Smithsonian Institution.
JOSEPH HENRY,
Secretary Smithsonian Institution.

On motion, the action of the Chancellor and Secretary in relation to the memorial was approved.

The Secretary gave an account of the correspondence of the Institution, and as an illustration of its diversified character read the letters which had been received that day.

On motion of Mr. Maclean, the annual report of the Secretary was accepted, and the officers of the Institution authorized to transmit it to Congress.

A motion of Mr. Wallach, in behalf of the Executive Committee, to increase the salary of the Secretary, was referred back to the same Committee, with instructions to make a report on the whole subject of the compensation of the officers of the Institution at the next meeting.

Adjourned, to meet at the call of the Secretary.

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EXTRACTS FROM THE GENERAL CORRESPONDENCE SUBMITTED TO THE BOARD OF REGENTS.

From the Records of the American Academy of Arts and Sciences.

BOSTON, MASSACHUSETTS, *May* 29, 1866.

Remarks were made by the president and by the librarian on the aid rendered by the Smithsonian Institution in effecting the exchanges of the academy; and, on motion of the librarian, it was voted: That the thanks of the academy be presented to the Smithsonian Institution for the generous and efficient aid which it has rendered through its system of foreign exchanges and distribution of publications, by which the academy has greatly profited.

CHAUNCEY WRIGHT,
Recording Secretary American Academy.

From George H. Knight.

CINCINNATI, OHIO, *July* 10, 1866.

The system of weights and measures being on the tapis, ought we not to save posterity a world of trouble by once for all dethroning *ten* as the metrical number in favor of *eight*—a number susceptible of indefinite bisection, itself a cube, (2^3,) and whose square is a cube, (4^3?)

Two with its multiples is the natural division in measures; witness the old dry measure: 2 gills=one jack; 2 jacks=one pint; 2 pints=one quart; 2 quarts=one pottle; 2 pottles=one gallon; 2 gallons=one peck; 4 pecks=one bushel; 8 bushels=one-quarter; 4 quarters=one chaldron, &c.

The system would, of course, abolish the two digits, 8 and 9. Eight would be represented by the sign 10, and nine by 11, while $8.\times 8.=100$. I am not unaware of the prodigious labor involved in such a change—a labor too great for an age which expends more on litigation than on its wheat crop; but I nevertheless believe it will be undertaken by some future age at a far greater sacrifice.

From E. C. Bolles, Secretary of the Portland Society of Natural History.

PORTLAND, MAINE, *August* 24, 1866.

The Portland Society of Natural History has always felt that the Smithsonian Institution was its best friend. Unnumbered instances of a generous regard, rising to munificence in the time of our loss and trial; wise counsels never out of place; wonderful facilities for scientific interchange most cheerfully granted, all compel us to this belief; and it is in obedience to this conviction that we lay before you, at the earliest possible moment, a statement of the present condition of our society, which, in the terrible calamity well known throughout our land, has been almost the greatest sufferer of all.

The destructive fire of July 4th consumed our building and collections, leaving, from the peculiar construction of the former, scarcely a vestige of the interior of the hall. We regret to say that this loss was entirely unnecessary. The structure was eminently fire-proof, separated by 20 feet on each side from the buildings on the right and left. A large wooden house on the right had been entirely burned without danger to our property; the library had been quietly and

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safely removed; in the event of possible danger there seemed time enough to secure the cabinets, which were already so arranged as to be readily carried out, when an ill-judged explosion of powder in the building on the left blew out the few windows in our premises, and drove the burning mass of splinters and boards quite over the lower floor of our lecture-room, and left this, of course, in a moment, only a sheet of flame. This unexpected blow, almost destroying several members of the society, rendered all further efforts to save our property vain.

You will be pleased to learn that all our books and pamphlets, including our own and the Smithsonian publications, were saved. I wish that I could say as much for the collections, but, excepting about 100 species of shells, withdrawn for a special purpose and not then returned, all was lost.

And now we beg to assure you that the society *still lives*. Not even this second trial by fire shall destroy our existence and work. Although since that night of disasters every one's heart and brain have been overtaxed, we have not lost a single meeting. One result you will see in the enclosed appeal, which document we have circulated among such men of science as were catalogued in the "Naturalist's Directory." We find ourselves almost penniless. Our city is too well drained of its resources to afford more than a few scanty crumbs of aid. What response will be made to our petition we do not as yet know; certain it is that if this machinery fails we shall try some other. Our fortune, by its very hardness, rouses and stimulates us. We are very anxious to have some building of our own, however humble, rather than multiply risks by sharing with other organizations the common shelter of one roof. We feel better to-day, because no part of our loss is to be charged upon our own want of forethought or immediate care.

Our present location might again serve us were it not for public demands and interference. The walls of our building are as good as when first built; but the city, in making the street in front of us wider, cuts off about 20 feet of our building, reducing the dimensions of our land too much to leave the rest of use to us. I need scarcely add that, under the most favorable terms of sale, we cannot close our business matters up to have more than $2,500 remain above our mortgage debt.

But we ought not to tax your patience further. We shall be most grateful for your sympathy, suggestions, aid. Situated as we are, there is not another institution of science that has been forced to record two such terrible chapters of misfortune. But we mean, if Providence blesses our labors, to make it true that no local society of natural history shall leave in years to come a better chapter of hard-earned prosperity and fame.

[NOTE.—We are happy to state that this society is again in a flourishing condition, and that permission has recently been given to it by the city government to occupy, free of charge, rooms in the new city hall building; also, that the Smithsonian Institution has presented it with another very complete set of its duplicate specimens of natural history.—J. H.]

From Josiah Goodwin, secretary and editor of the Bath and West of England Society for the Encouragement of Agriculture, Arts, Manufactures, and Commerce.

BATH, *September* 3, 1866.

On behalf of the president and council of the Bath and West of England society, I have the honor to acknowledge the safe arrival of the several books enumerated in the invoice numbered 804*a*, 1866, which I beg to enclose receipted; and I have much pleasure in conveying to the honorable the officers and Regents

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of the Smithsonian Institution the assurance that the president and the council of the Bath and West of England society entertain not only a very high sense of the valuable services conferred on the scientific world by the labors and publications of the Smithsonian Institution, but they cannot too highly applaud the enlightened liberality which has actuated the conductors of the Smithsonian Institution in the establishment of such an admirable system of organization for facilitating the mutual interchange of the publications of the learned and other societies in various parts of the great continent of America and the United Kingdom of Great Britain and Ireland.

Acting in a reciprocal spirit, I have much pleasure in transmitting, through your recognized agent, several volumes of the Bath and West of England society's journals, in order to complete the set in the library of your Institution, more especially as the earlier volumes can now be obtained only very rarely, as the society's stock is entirely exhausted.

From Dr. Brehm, the director of the Zoological Gardens.

HAMBURG, *September* 11, 1866.

I am in receipt of your letter dated the 2d of last month, in which you state that a specimen of the American great horned owl is offered for the acceptance of the zoological society of this city, by the Smithsonian Institution; and I have the satisfaction of stating that the bird has arrived in good health and condition, and the society is very much obliged, and will do itself the pleasure of returning the compliment if you will indicate in what manner it can be done.

If I might further intrude on the kindness of the Institution, it would be to say that some of your common finches *(Fringillidæ)* would be very acceptable, as the birds usually imported are only such as, e. g: *Cardinalis virginianus, Spiza cinis, Astragalinus tristus*, and *Cocoborus ludovicianus*. But we get overdone with these birds of dealers, and which are popular with private purchasers, who do not value the less externally attractive and common birds which I am anxious to possess. Some of the *small* owls I should also like to have from America, together with any of your ducks, *(Anas,)* excepting the "summer duck," which, for the same reason as I have above given in regard to other birds, are imported into Europe in quantities.

It is remarkable that the "snow goose," though abounding in the United States in any number of thousands, is not in any European zoological garden. Will you please to think of me with special attention with regard to this bird?

From the Chicago Academy of Sciences.

CHICAGO, *February* 11, 1867.

The undersigned, trustees of the Chicago Academy of Sciences, desiring to signalize in a more special manner their sense of the great obligations the academy is under to the Smithsonian Institution, have caused a list to be made of its recent donations to their library and museum, and take this method of expressing to you their sincere thanks, not only for these books and specimens, but in general for the fostering care with which the Institution has treated, from its inception, our attempt to establish a strictly scientific museum here in the west.

Very respectfully, your obedient servants,

GEO. C. WALKER.
W. E. DOGGETT.
E. G. McCAGG.
J. YOUNG SCAMMON.
H. G. LOOMIS.
E. W. BLATCHFORD.
DANIEL THOMPSON.

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Report on an improved system of numeration, by W. B. Taylor, Esq.

UNITED STATES PATENT OFFICE,
Washington, March 22, 1867.

I have examined the paper referred to, on the subject of an improved numeration for arithmetical operations, and have, respectfully, to offer the following remarks: The proposal is simply to interpolate six additional "digits" (if the term may be allowed) between the nine and the ten of our common arithmetical scale, in every order or place of figures; in other words, to substitute a senidenary for the received denary radix of numeration. This suggestion has been made, I believe, more than once before. In 1859, Mr. J. W. Nystrom, of Philadelphia, published an essay on what he called the tonal system, (ton being the name he assigned to the senidenary *ten*,) advocating the adoption of the number 16 as the basis of a universal arithmetic and metrology.

All who have given the subject of weights and measures much consideration will agree in the proposition that a scheme of continual bisections and doublings would prove a great convenience in all the operations of concrete arithmetic, and were it not for the enormous labor of a reconstruction, and the great time required for its general introduction among civilized nations, some such reform might be accepted as advantageous or desirable.

So early as the beginning of the last century, the illustrious Leibnitz elaborated a scheme of binary arithmetic, (whose only characters were 1 and 0,) and published a treatise in its exposition and support. A paper of his upon the subject will be found in the Memoirs of the Academie Royal des Sciences for the year 1703, page 85, in which he says he had himself employed this ratio of computation for many years, and that he regarded it as "la perfection de la science des nombres;" an opinion which, from such an authority, is entitled to very high respect.

It may well be questioned, however, whether the senidenary scale favored by your correspondent would fulfil the true desideratum—*a minimum of arithmetical labor*. There are considerations tending to show that even our present *denary* ratio is too high for the most complete and general facility. In balancing the two opposite conditions of conciseness of expression, and simplicity of construction, it must be borne in mind that while the number of places required to express a given value is diminished, simply as the *logarithm* of the radix increases, the mental labor required in using any scale is increased in a considerably higher ratio than the arithmetical increment of the radix; probably in a geometrical progression, or as some low power of the base. I am inclined to believe, therefore, that as between the binary and senidenary systems, the former is decidedly to be preferred; that the economy of places or of expression in the latter would prove but a trival compensation for its much larger range and variety of symbols and the far greater complexity of all the tables and processes necessary in its employment.

For all popular uses, either the quaternary or octonary scale would probably be found much more convenient than either of these suggested extremes, and certainly much more available for the distribution of weights and measures.

In 1719, Swedenborg published an Octonary Computus, and a project of an octaval system of weights, measures, and coins. It is said that Charles XII, of Sweden, had contemplated the experimental adoption of the scheme not long before his death, in 1718.

It may not be considered irrelevant to here briefly compare the four different scales above mentioned with our established scale, in point of expressiveness.

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Scale of comparison.

Scale.	Radix.	Logarithm.	Approximate No. of places.	Expression for the present year.
Denary	10	1.	1	1.867
Senidenary	16	1.204	$\frac{5}{6}$	.743
Octonary	8	.903	$\frac{10}{11}$	3.513
Quarternary	4	.602	$\frac{5}{6}$	131.023
Binary	2	.301	$\frac{10}{11}$	11.101.001.011

Or to compare them in the expression of very large values, as for example, of such a sum as the number of grains of sand required to constitute a globe as large as our earth, (which, assuming 10 millions of grains to the cubic inch, would not exceed 659 quintillions, an expression requiring 33 places of figures,) we should find that the senidenary scale would require 28 figures, (a reduction quite insignificant,) the octonary would require 37 figures, (an excess equally insignificant, with only half the number of digits, and probably not one-fourth the difficulty,) the quarternary 55 figures, and the binary 110 figures.

In conclusion, I would express the opinion that the arithmetical scale suggested by your correspondent does not promise a convenience which would justify the subversion of the existing system of enumeration in its favor.

From Count de Lulk, President of the St. Petersburg Academy of Sciences.

ST. PETERSBURG, *May* 13, 1867.

Having received, through the kind attention of his excellency General Clay, the letter which you did me the honor to address to me under date of the 25th of March last, from the city of Washington, I lost no time in communicating its purport to the Imperial Academy of Sciences. That body has accepted, with the most lively acknowledgments, the offer which you make, in the name of the Smithsonian Institution, to enrich the museums of the academy with the gift of duplicates of the objects of natural history, collected in the Russian possessions in America, as well as of those which M. Bischoff shall have an opportunity of collecting in Kamtschatka and the province of the Amour.

At the same time I deemed it my duty to address to General Korsakoff, governor general of Siberia, a request that he would have the goodness to give such orders that M. Bischoff shall find, during the expedition which he contemplates, assistance and protection on the part of the local authorities. By an official despatch of the 25th of April, M. Korsakoff informs me that he has written on this subject to the governors of the provinces which M. Bischoff has the intention of visiting, and has, at the same time, conveyed to me an open order (in the Russian language) which it will be proper that M. Bischoff shall carry with him and produce to the local authorities in case of need, that he may secure their protection and assistance, be enabled to procure from the magazines of the state provisions at the legal rates, and be received on board the vessels of the empire. This document I have the honor of transmitting with the present communication, and beg, sir, that you will accept the assurance of my most distinguished consideration.

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From H. Zisqenbals.

LEIPSIC, *May* 17, 1867.

Enclosed I send you the prospectus of the Schlagintwait collection of ethnographic heads of India and higher Asia, which, in view of the purpose now entertained of forming a comprehensive museum of such representations, cannot fail to be of interest to the Smithsonian Institution.

The price of the collection is, as has been already stated, somewhat high, and is established at the following rates:

1. Single heads, according to the choice of the purchaser, for 11 thalers.
2. At least 25 heads taken at one time, at 9 thalers.
3. The complete collection, 275 heads and 37 impressions of hands and feet, taken at one time, 2,348 thalers.

In case of a commission for the above purpose I would hold myself in readiness to superintend the transmission in the best and most expeditious manner.

From W. Alfred Lloyd.

HAMBURG, *May* 25, 1867.

The *sparrows* will be sent in about two months from this date, when the young birds born this spring will be strong enough for travelling. They are not very easy to keep in captivity, and I must try to find out by previous observation what will be the best manner of forwarding them. You shall, of course, have due notice and proper instructions, and I will place them in the care of a trustworthy person, to whom a premium can be offered, varying in amount according to the number delivered alive and in good health. This is the plan I adopt with regard to the transport of living aquarium animals, and thank you very much for kindly trying to send me some. I mentioned sea anemones and madrepores, they being easier to send alive than some other animals, but I should be glad to have any American invertebrata, particularly marine, as I try to make the aquarium of our society a kind of museum of the lower aquatic forms of life. I think I did send you a pamphlet containing a list of those I have already obtained, chiefly from England and the north of Europe, and I am now desirous to get things from places further afield. I believe many of your marine crustacea might be forwarded with no very great amount of difficulty, but the only examples I have yet obtained are *Cenobita Diogenes*, from Cuba, and *Limularpolyphemus*, from New York. I have still some of the last named, but they are too big for my accommodations, and I am anxious to see very young specimens—say a couple of inches long. Last week I almost got some crabs from the South Sea islands. They appear to be situated somewhere about grapsus or gonoplæ. These three forms of crustacea reached Europe alive because of their habit of living much out of water, not usually *immersed* in fluid, but only kept damp, so that the fact or accidence of their own avoidance of being kept actually below the surface of the water caused their gills to be sufficiently aerated on the voyage, as it is evident that thin films of water presented to the atmosphere are more quickly oxygenated and acted upon than large masses, because of the presentation of greater surfaces to the action of the atmosphere, just the same comparing together dissimilar processes that a lump of sugar placed in water as a solid lump takes a much longer time to dissolve than if the same quantity were powdered, because when in the form of powder the water has an infinite number of surfaces to act upon all at once. For this reason I keep all difficult marine animals in shallow water. A cubic foot of fluid, arranged as a cube, presents to the atmosphere a surface of 144 square inches, whereas, if the same cubic foot be spread out so the depth is but three inches, the surface presented is 576

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inches, and the amount of oxygen absorbed by the atmosphere in contact with it and the health of the animals immersed in it (always supposing they have enough space in which to move) is according to the arithmetical expression of the case. Even deep-sea creatures obtained from the greatest depths to which dredges and sounding lines have ever penetrated try to get to the *surface* of the aquarium they are placed in, to seek the air which the enormous pressure gave them in the waters they inhabited in nature, and appear to suffer no inconvenience by the removal of that pressure, their tissues being vascular and permeated by the water on all sides. I trouble you with these particulars as being useful hints in the sending of any aquatic animals, as sailors and others are so apt to keep them in deep water, i. e., deep water relatively to the surface exposed afforded by the vessel they are brought in. I have often thought that a large tub containing masses of rough cleaned sponge, (such as is used for stable purposes,) would answer well in bringing over some crustacea, and perhaps sea anemones. Some small holes should be bored in the side of the tub about three inches from the bottom, and then, if a quantity of sea-water were daily or oftener poured over the sponge and animals, it would find its way out at the holes and leave the sponge saturated with moisture. Each mass of sponge would be a kind of lung perforated with openings in all directions, and the fluid contained in the sponge would thus have a very large surface exposure to the surrounding air, and the crabs would climb upon and absorb it, while the three inches of water below would effectually prevent desiccation. Twenty or thirty small crabs so brought to Europe in a tub of about four feet diameter, covered over the top with a net, would be very nearly in the condition, chemically speaking of, as many birds or other lung-breathing creatures. The sponge too would, I think, prevent injury to the animals by the motion of the ship. We know far too little of the habits of invertebrate aquatic forms of life from parts of the world distant from us, as we have not given sufficient consideration to the proper means of transporting them. What is wanted is not only water but *air in the water*, and if on board ship the appliances are somewhat rude, so that the fluid cannot be kept as pure as it might be kept on land, then shallowness and the presentation of great surfaces of fluid to the purifying influences of the atmosphere are the best means of getting over the difficulty. We shall be very thankful for the promised *menopoma*.

From W. Alfred Lloyd.

HAMBURG, *July* 13, 1867.

By the steamer Borussia, leaving here this evening, the "Zoologische Gesellschaft," of Hamburg, sends for the acceptance of the Smithsonian Institution at Washington a collection of upwards of 300 living sparrows, in accordance with a wish expressed by you, as you desire these birds to multiply in your country that they may consume the insects that devour corn, vegetables, and fruit growing in the ground. Will you please report on their arrival and say how many, if any, reached you alive; then this society will pay the man in charge a proportionate premium for himself. The freight is free between our two Institutions by all the vessels of the Hamburg New York company. Please return the cages, and, if you wish, we will send more in them, *and continue to forward you supplies till we succeed, if success be possible.* Sparrows from England have been sent, after some trials, to Australia, and they are there thriving, I believe. If any ill-luck should happen to the present consignment, please try to find out the cause of it, in order that in renewing our attempt we may learn from experience of the past. I have heard something of the value of transporting such birds to long distances confined in small cages, with two or three in each, but no *reason* was given for it, and therefore I cannot see why such a system should be

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right or wrong; but if you find a good *cause* for it, let me know and I will adopt the plan, or any other.

You were, in your letter of April 24th last, so kind as to say you would endeavor to forward my wish in procuring from America some living marine animals for our aquarium here, and I should be glad to know what success you have yet met with. Some weeks ago I sent you a letter setting forth at full length my views on the transport of non-lung-breathing animals, and I trust that the explanations I ventured to trouble you with may be of some service in getting over difficulties. We know very little of non-European zoophytes in a living state, and, as I may have told you, American sea anemones have been brought over *only once*, though such animals from Britain have several times been sent to your country and to Australia.

I am *exceedingly anxious* to obtain some of your Helian thoid polypes, your sea anemones and madrepores; and no matter how common they may be with you, they are sure to be interesting and valuable to me, unless it is positively known beyond all doubt that they are identical with European species, and even then the very fact of the identity would be of interest. *So please send me any.* Of course you have got Gosse's "Actinotoba Britannica," 8vo, 1860. It is the text-book for British Actineas and Madrepores; and I am told that Rhodactinea is exactly the same as our Act. mesembry anthemone. I should like to prove this. I have also heard that our Actinotoba dianthus is "very near your M. marginatum," and this, too, I should like to clear up.

Arachnactis, the only swimming anemone known, is reported to be very abundant with you; it finds a place in the lists of our British fauna, but I do not know any one who has ever seen it, and I fear it is too small and delicate, and too near in texture and habit to the Acalaphæ to be brought here alive. *Bisidiam* and *Haleampa*, too, are two of your minute forms I should like to get.

Our two commonest British corals, *Caryophyllea* and *Balamphyllea*, are exceedingly hardy in transport, and if your stony corals are anything like ours the sending them over is a matter of no great difficulty.

We have but one really denotoid coral in Britain, *Laphohelia prolifera*, and its corrallam even is very rare indeed, and no British naturalist has ever seen it alive. Tropical (American and other) branching corals are constantly being brought to Europe by tons weight, but never once has a single living specimen been imported in good health. Lately I went to much expense in trying to get some from the Navigators' islands, but they all arrived without a particle of fleshy matter on them. You may judge from this what a great prize I should deem an *Astrangia* colony here in Hamburg, and this is found in abundance, I believe, in Massachusetts bay. It is right to name the name of the man who for the first and only time brought sea anemones from your country—Captain H. W. Wendt. In my blazing zeal I have had his photographic portrait framed; and, common sailor though he looks, he is in my eyes a greater man than all the political fellows who go raving up and down various countries. The species were *Phymactis florida* and *Phymactis pluvia*, from Iguazee, in Peru, and described in Dana's great work in quarto and folio on Captain Wilkes's United States exploring expedition.

The Echinodermata of any kinds, hard or soft, would, I fear, not travel, but I need not say how much I should value a living *Echinarachinus*, of which only one example of one species (E. Placenta) has ever been found in Britain. With you it is very common.

Fishes from America are not to be hoped for, I am afraid, though I have got two alive, *(Pimelodus catus* and *Leneiscus pygmaeus.)* But some of the crustacea might, I imagine, be got over alive; for example, *Homarus Americanus*. And judging from it, I should imagine your edible crabs and your soldier crabs to be different specifically from ours.

But pray assist me in preventing the importation of *Limulus polyphemus*

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(horseshoe crab,) which come over here in such numbers that lately I have with them stocked all the marine aquaria of England and the continent of Europe, and I do not know what to do with those I now have over. I do not like to see the poor things dying by inches, and my mind revolts at plunging animals full of life and health into spirits. It would be well if *Limulas* were less hardy.

From the Museum of Natural History of the National University of Greece.

ATHENS, *August* 12, 1867.

We have learned, through M. Rangabé, our envoy extraordinary and minister plenipotentiary near the government of the Union, that the directorship of the Institution of Smithson is desirous of entering into relations of exchange with our museum of natural history, with a view to obtaining the natural productions of Greece. We lose no time in expressing the pleasure which this information has given us, and the gratification we shall experience in forming and maintaining such relations, which cannot fail to be of great advantage to our own museum, inasmuch as our collections are at present but scantily provided with objects pertaining to the natural history of North America. As regards duplicates of the objects of our own country, we have in readiness for offering to the Institution: a series of fossil bones of different mammifers (Hippotherium grande; Rhinoceros partygnathus; Sus erymanthius; several species of antelope, &c., &c.,) of the pleocene formation of Pikermi, in Attica; a collection of impressions of fossil plants of the eocene formation of Koumi, in Enbir; preparations of several kinds of birds of Greece; eggs of different Greek birds; marine shells, fresh-water and terrestrial.

We beg to be instructed as to what the Institution would desire, or rather what it would prefer to receive in the first instance, in order that we may be able at once to make a first remittance. We should be glad, at the same time, to know by what channel, by what means, and to what address our remittances must be forwarded. It would be esteemed a favor if the authorities of the Institution would inform us in a compendious note what objects it possesses in duplicate and at its disposal for exchange, so that we might indicate in turn our own desiderata.

We have the honor of subscribing ourselves, with assurances of the most distinguished consideration,

TH. DE HELDREICH,
Conservator of the Museum of Natural History.
HEHITZOPOULOS,
Ephor of the Zoological, Mineralogical, and Geological Collections of the Museum of Natural History of the University.

From Professor Laboulaye, of the Institute of France.

PARIS, *September* 4, 1867.

I have received, through M. Bossange, the case containing 174 volumes of educational books, which you had the goodness to send me. These books form the admiration of all who take an interest in education, and I hope that France will profit by this example. We have excellent things at home by which you in turn might profit; but we have seen nothing comparable to your "Reader," your "Object Lessons," your "Graphics," and your "Geographical Series."

I send you a letter for each of the editors who has been kind enough to make

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me a present; and I avail myself of this opportunity to say to you how much I am touched by the proof you have given me, on this occasion, of good will. You have treated me as a compatriot, and, sooth to say, there is no Frenchman who is more American than myself.

[The works referred to were presented by American publishers of school books at the request of the Institution.—J. H.]

From D. G. Lindhagen, perpetual secretary of the Academy of Sciences of Stockholm.

STOCKHOLM, *November* 4, 1867.

I have had the pleasure of receiving, in behalf of the Academy of Sciences at Stockholm, your letter of the 29th of May last, accompanying your remittance, through M. Flügel of Leipzic, of a collection of very rare birds of the Arctic regions of your continent—a collection which your distinguished Institution has had the goodness to present to our academy.

The package arrived in the month of August, during my absence on certain commissions of the academy, and was transmitted to M. Sandevall, intendant of the national museum of natural history, who presented it to the academy at its first meeting in autumn, pronouncing its contents to possess great value for the museum.

Permit me to convey to you the thanks of the academy for this acceptable donation.

From John Gould, esq.

LONDON, *November* 25, 1867.

I beg to thank you most sincerely for your kindness and liberality in sending from time to time for my inspection, through Mr. Lawrence, of New York, specimens of humming-birds belonging to the Smithsonian Institution, which he has designated as new species. By these acts of condescension you are greatly aiding the cause of science, since it is only by the actual comparison of such examples with the older known species of this extensive family in the collections of this country that the fact of their being new can be satisfactorily determined.

From S. P. Mayberry.

CAPE ELIZABETH, MAINE, *January* 4, 1868.

I am very much pleased with the selections in your reports, and hope that some means may be taken for their more extended circulation. While at a summer resort, Rye Beach, New Hampshire, of some celebrity, attention was called to the gradual approach of the sea upon the land. Some 20 rods below high-water mark, at an exceeding low tide, may be seen the stumps of quite large trees embedded in the sand, and from the general appearance one would suppose that the trees had been felled from those stumps. I made inquiry of the oldest inhabitants if they had any information relative to them; they had none; that, in their time and that of their fathers', these had been noticed, seeming not much further out to sea than at the present time. There is no growth within 800 yards. The country around has been settled since 1623. About two miles from this used to be a fine sand beach, which has disappeared. The inhabitants thought

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the constant play of the sea had worn it, but from what I saw I rather inferred that the gradual approach had not been noticed, and I believe at some other points there is unmistakable evidence. If these facts are of any use to science, they are at your disposal.

[The facts presented in the above communication are very interesting, in connection with similar observations at other points along our coast. They indicate a movement in the strata of the earth.—J. H.]

From Lucien Pratt, professor of physics and chemistry, University of San José, Costa Rica.

SAN JOSÉ DE COSTA RICA, *February* 8, 1868.

We have received through M. the minister of public instruction a magnificent collection of the scientific memoirs of the Smithsonian Institution, which will form the most precious part of the library of our university. I am authorized to keep it in the laboratory, and I can assure you that, as far as we are concerned, the object of the publication will be fully attained. It will essentially serve to augment our stores of knowledge, especially in meteorology and geology. The minister has, I believe, already written to the Smithsonian Institution in the name of the Costa Rican government. Permit me, sir, specially to offer you my own acknowledgments and to say how greatly I felicitate myself at seeing our laboratory placed in the relationship of exchange with one of the first scientific bodies of the world. Regarding neither the paucity of the present population of the country, nor the necessarily embryonic state of the University of San José, you have looked only at our disposition to labor, to take part in the scientific movement of the great nations, and you have treated us with a liberality for which I know not how to express my gratitude.

I was about to solicit an order to send you a collection of the ores of the country and of the most characteristic rocks among those which I have thus far been able to collect, when this very order was issued to me. I have, therefore, prepared two small cases, enclosing 39 select specimens of the ores of gold and silver of Costa Rica, as well as of some eruptive rocks and principal limestones known in the country.* These two cases I propose to despatch by the mail of day after to-morrow.

The specimens of ores of gold and silver are accompanied only by a designation of the locality; by the next post I shall have the honor of addressing you a copy of an official table drawn up by one of the judges of mines, in which you will find all the indications relative to the value of the ores. I send no table of analysis, because this analysis would apply only to isolated specimens or at most to an average of specimens, and would never have the practical signification of the results obtained by the *exploitation*. Neither have I sent any specimen of the enveloping stratum, because the specimens which I have at the university have been taken rather too near the surface, and it is impossible to recognize in the decomposed rock any mineralogical character which would authorize a determination respecting the formation itself. It should be added that I have not yet been able to proceed to a study of the conditions of the bearings on the spot. As soon as I shall have found time to make a geological reconnaissance of the principal Costa Rican mines, I will send you a statement of my observations, and will submit to you at the same time specimens of the rocks in support of my determinations. It would be very interesting to see whether the law of Humboldt applies to Central America, and whether it be really necessary always to

* These specimens have been received at the Institution.

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seek the precious metals at the point of contact of the porphyry and trachyta. I do not doubt this law as far as the great formation of South America is concerned, but it appears to me that here and in all South America the upheavals have taken place at several intervals and relatively on a small scale, so that all is confounded.

You will excuse, I trust, sir, the meagreness of our remittance, in consideration that it is barely two years since the university has possessed a laboratory. The work of organization, indeed, is not yet fully completed. I have no preparator, and the most advanced of my pupils have had less than two years' tuition. I have a number of schemes in view which can only be realized by degrees. In all that relates to a serious study of the country, it was impossible to commence anything before providing assistants, without whom an isolated explorer, however earnest his purpose, would find himself reduced to two hands and 12 hours' labor per diem. The government, by which the laboratory has been established, has always protected us with a liberality sufficiently indicative of its enlightened views, and I hope that ere long myself and my disciples will be enabled to give far other proofs of our existence than a scanty remittance of some 39 specimens.

It is possible that we shall remain for some time among the poorer correspondents of the Smithsonian Institution, but have the goodness to believe that we shall be among the most zealous, and of the number of those always most ready to contribute, according to our resources, to the noble objects which the Institution holds up to view.

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BIOGRAPHICAL NOTICE OF CHARLES COFFIN JEWETT,

(FORMERLY ASSISTANT SECRETARY OF THE SMITHSONIAN INSTITUTION, IN CHARGE OF THE LIBRARY.)

By Reuben A. Guild, of Brown University.*

Again we are called upon to mourn the loss of a distinguished man, whom death has suddenly removed from earth in the prime of life and in the midst of his accustomed duties. We refer to Professor Charles C. Jewett, superintendent of the Public Library in Boston, who died at his residence, in Braintree, yesterday morning, at half-past 1 o'clock, after a brief illness of ten hours. On Wednesday, we are informed, he was at his post in the library, attending to his work as usual, until 3 o'clock in the afternoon, when he was seized with a sensation of numbness in one hand, which proved to be paralysis. He remained conscious for a time, and after having had medical attendance, requested to be carried to his home. On the way he became insensible, and thus he continued until his death.

Mr. Jewett was born in Lebanon, Maine, on the 12th of August, 1816. His father, the Rev. Paul Jewett, was a Congregationalist clergyman of Salem, Massachusetts, who graduated at Brown University in 1802, in the same class with the late Hon. Henry Wheaton, LL. D., author of "Elements of International Law." He was a tutor in this institution from 1806 to 1809, and was afterwards offered a professorship, which he declined, preferring the labors and responsibilities of the Christian ministry to those of any other calling or profession. He was a man of talents, of accurate learning, of cultivated taste, and of very retiring habits. In the education of his children he took unwearied pains. His eldest son was, until recently, a well-known and enterprising publisher and bookseller in Boston; the second is the one whose loss we to-day deplore, and a third was for several years a professor in Amherst College.

Mr. Jewett passed his early life in Salem, graduating at the Latin School in that place. He entered Dartmouth College in 1831, but transferred his connection, in his sophomore year, to Brown University, where he graduated in the famous class of 1835. He spent two years or more in teaching at the Uxbridge Academy, and subsequently studied at the Theological Seminary in Andover. Here he devoted himself chiefly to Philology, and especially to the oriental languages and eastern antiquities, in which departments of knowledge he attained great proficiency. Indeed, according to the testimonies of the late Professors Stuart and Edwards, few students, if any, had in these departments excelled him. His commencement address at Andover attracted universal attention, and was greatly admired on account of the elegant style in which it was written, and the thorough acquaintance with oriental subjects which it evinced on the part of the author.

During his residence at Andover, Mr. Jewett was for a year and upwards the librarian of the seminary, and he assisted Mr. Taylor in the preparation of a catalogue of the books. At this time he was intending to spend several years, and perhaps his life, in the East as a missionary, and he had, accordingly, at the close of his theological course, marked out for himself an extensive course of study and research. He had been offered facilities for the accomplishment of his wishes such as few scholars, in this country at least, had ever enjoyed. When ready to embark, so slight a circumstance as the misdirecting of a letter to inform him when the vessel in which he had taken passage was to sail, changed his

* From the Providence Evening Press, Friday, January 10, 1868.

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whole course of life. The vessel sailed without him, and he took charge for a year of "Day's Academy," so-called, in Wrentham, Massachusetts. Here we first made his acquaintance as a pupil, and we shall never forget his genial manners towards all, and his cordial affection for those especially whom he instructed. In 1841 he was appointed librarian of Brown University, and he entered upon his duties in the month of October. He at once set himself to the task of rearranging the books, then numbering about ten thousand volumes, and of preparing a catalogue of the same. For this kind of work he had an uncommon aptitude. The catalogue was published in 1843, and attracted much attention, being favorably noticed in the North American Review, and in other periodicals. Especial care was now given to this department of the University, and a new era in its history was inaugurated.

Soon after the publication of the catalogue, Mr. Jewett was elected professor of modern languages and literature in the university. He immediately embarked for Europe, where he spent two years and a half, principally in France, Germany, and Italy, devoting himself to the acquisition of the languages of these countries, and making himself familiar with all the principal libraries. During his residence abroad, Professor Jewett made valuable purchases of English and classical books, under the direction of the library committee. He was also intrusted with large commissions by a gentleman of the corporation, for the purchase of standard books in the three principal modern languages of Europe. These purchases, amounting to seven thousand volumes and upwards, were made with singular skill and fidelity; and the accessions thus secured now constitute the choicest treasures of the library.

Upon his return from Europe, Professor Jewett devoted himself to his college duties as teacher and librarian, until March, 1848, when he resigned his position at Brown to accept the place of assistant secretary and librarian of the Smithsonian Institution at Washington. He entered upon his new duties with enthusiastic ardor, and with all the fondness and capacity for hard and persevering labor for which he had been pre-eminently distinguished. He was doomed, however, to disappointment in his efforts to build up a great national library, and thus to carry out what he understood to be the expressed wishes of Congress in regard to the expenditure of the Smithsonian funds.* The controversy between science and literature, as represented by Professors Henry and Jewett, attracted great attention at the time, and subjected the latter to trials which fully entitled him to the sympathy that literary men so cordially gave him. But of the merits of this controversy we do not intend here to speak. Although unable, as already stated, to carry out his plans, Professor Jewett did much to promote bibliographical studies and the success of American libraries. His "Notices of Public Libraries in the United States," which was printed in 1850, was widely circulated and met with very general favor. He also perfected a system of cataloguing, by stereotyping separately the title of each work in a library, thus combining economy with accuracy. This system, indorsed by Edward Everett, Joseph G. Cogswell, Charles Folsom, Samuel F. Haven, Edward E. Hale, and George Livermore, was published under the auspices of the Smithsonian Institution, together with rules and examples for the proper cataloguing of books.

When it was decided to establish a great public library in Boston, Professor Jewett, by common consent the ablest bibliographer and most accomplished librarian in the country, was selected as the one of all others to superintend its affairs. Although offered an honorable position in our oldest university, and the presidency of a western college, he cheerfully accepted the place urged upon him by the trustees of the public library. The library building was dedicated with appropriate ceremonies on the 1st of January, 1858, and in October following the

* The wishes of Mr. Jewett in regard to a library at the seat of government worthy of the nation, are now being realized by the action of Congress, through the influence of the Smithsonian Institution, though not at the expense of its funds.—J. H.

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first catalogue of books was published. For more than 10 years Mr. Jewett has thus been identified with the best interests of learning in the metropolis of New England. The catalogues which he has prepared, and the rules for the government of the library which he has suggested, have served as models for similar libraries in all parts of the country. To his thorough and systematic knowledge, and to the faithful performance of his duties, the citizens of Boston are largely indebted for the rapid growth and complete success of what seems destined to be *the library* of the land.

The early death of such a man must be regarded as a public loss. What shall we say, alas! for the loved wife and children who survive him, and for those who enjoyed his friendship, and who knew him in the most intimate relations of private life? For such, it is a consolation to know that his daily walk and conversation was a beautiful illustration of the Christian's faith; and that the heavenly smile which rested upon his features in the calm repose of death was but an index to the soul that had ceased to animate them forever. The loss of such a man, viewed in its religious aspects, is indeed "gain."

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BIOGRAPHICAL NOTICE OF WM. HENRY HARVEY, OF DUBLIN.

By Professor Asa Gray, of Harvard College.

[This biography is republished from the American Journal of Science and Arts as a tribute to the memory of a most valued collaborator of the Smithsonian Institution.—J. H.]

William Henry Harvey, whose lamented death was announced in the last number of this journal, (p. 129,) was born at Summerville, near Limerick, Ireland, on the 5th of February, 1811. His father, Joseph M. Harvey, was a highly respected merchant in that city, and a member of the Society of Friends. William Henry was, we believe, the youngest of several children. He received a good education at Ballitore school, an institution of the Friends, and on leaving it was engaged for a time in his father's counting-room, devoting, however, all his spare time to natural history, his favorite pursuit even from boyhood. He made considerable attainments in entomology and conchology, and in botany he early turned his attention to mosses and *algæ*. To the study of the latter, in which he became pre-eminent, he was attracted from the first by the opportunities which he enjoyed on the productive western coast of Ireland, the family usually spending a good part of the summer at the seaside, mostly on the bold and picturesque shore of Clare. As the late Sir William Hooker's bent for botany was fixed by his accidental discovery of a rare moss, which he took to Sir J. E. Smith, so in turn was Harvey's, by his discovery of two new habitats of another rare moss, the *Hookeria lætevirens*, which led to a correspondence with Hooker, and to a life-long mutual attachment of these most excellent men. Encouraged by his illustrious friend and patron, Harvey sought some position in which he might devote himself to science; and it would appear was selected by Mr. Spring Rice (the late Lord Monteagle) for the post of colonial treasurer at the Cape of Good Hope; that by some accident the appointment was made out in the name of an elder brother, and an inopportune change of ministry frustrated all attempts at rectification. There was no other way but for the brother to accept the undersigned appointment, and take the young botanist with him to the Cape as his assistant. This was done, and the brothers sailed for that colony in the year 1835. But the health of the elder brother suddenly and hopelessly failed within a year, and he died in 1836 on the passage home. William Harvey's appointment to succeed his brother had been sent to the Cape while he was on his homeward voyage; he immediately returned to his post and fulfilled its duties for three years, devoting his mornings to collecting and his nights to botanical investigation, with such assiduity that his health also gave way, and he was compelled to return home in 1839. The summer of the next year found him re-established and on his way to the Cape for the third time. But he could not long endure the sultry climate and the intense application; with broken health he came back in 1841 and gave up the appointment.

After two years of prostration and seclusion he was well again; and in 1844, on the death of Dr. Coulter, he was appointed keeper of the herbarium of Trinity College, Dublin. The most important portion of the herbarium then consisted of the collections, yet unassorted, made by Coulter in northwestern Mexico and California. Harvey generously added his own large collections, for which he was allowed fifty pounds a year in addition to a slender salary, and he proceeded to build up the herbarium into a first-class establishment. The professorship of

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botany in the college, which was pretty well endowed, fell vacant about this time, and the college authorities, wishing to elect Harvey to the chair and so to combine the two offices, conferred upon him the necessary degree of M. D. But it was contended that an honorary degree did not meet the requirements, and so Dr. Allman, the present distinguished professor of natural history at Edinburg, carried the election.

Except for the slenderness of his salary, Dr. Harvey was now well placed for scientific work, the object to which he wished to devote his life, and he entered upon and pursued his distinguished career henceforth with an entire and well-directed energy that never flagged until he was prostrated by mortal disease.

He had already published, at the Cape in 1838, his *Genera of South African Plants*, hastily prepared, solely for local use, but no unworthy beginning of his work in Phænogamous Botany; and in his favorite department of the science he had brought out in 1841 his *Manual of British Algæ*, which he re-edited in 1849. He now commenced the first of the series of his greater works, illustrated by his facile pencil—for he drew admirably. The first (monthly) part of his excellent and beautiful *Phycologia Britannica, a History of British Seaweeds*, containing colored figures of all the species inhabiting the shores of the British islands, appeared in January, 1846, and the undertaking was completed in 1851, in three (or four) volumes, with 360 plates, all drawn on stone by his own hand. A similar but less extended work, the *Nereis Australis, or Algæ of the Southern Ocean*, which was begun in 1847, was carried only to 50 plates of selected and beautiful species.

In 1848, Dr. Harvey succeeded Dr. Litton as professor of botany in the Royal Dublin Society, to which belonged the botanic garden of Glasnevin; this required him to deliver short courses of lectures annually in Dublin or in some other Irish town, and provided a welcome addition to his income.

In 1848, at the request of his friend Van Voorst, the publisher, he wrote his charming little volume, *The Sea-Side Book*, the unsurpassed model of that class of popular scientific books; it was published in 1849, and has passed through several editions. In July of that year, having arranged a visit to this country, and having been invited to deliver a course of lectures before the Lowell Institute, he took steamer for Halifax and Boston, passed the summer and autumn in exploring the shores of the northern States, and in the society of his friends and relatives; for the late Mr. Jacob Harvey, still well and pleasantly remembered in New York, who married the daughter of Dr. Hosack, was his elder brother. In the autumn he gave an admirable course of lectures upon Cryptogamic botany before the Lowell Institute in Boston, and afterwards a shorter course at the Smithsonian Institution at Washington. He then travelled in the southern Atlantic States, continuing the exploration of our *Algæ* down to Florida and the Keys; and in May, 1850, he returned to Ireland.* Under the wise and liberal arrangements made by Professor Henry in behalf of the Smithsonian Institution, and with his own large collections augmented by the contributions which every student or lover of *Algæ* was glad to place in such worthy hands, Professor Harvey now prepared his *Nereis Boreali-Americana, or Contributions to a History of the Marine Algæ of North America*. The work is a systematic account of all the known marine *Algæ* of North America, but with figures only of the leading species. It was issued in three parts; the first part, the *Melanospermeæ*, in 1852, in the third volume of the Smithsonian Contributions to Knowledge; the second, the *Rhodospermeæ*, in the fifth volume; and the third, or *Chlorospermeæ*, in the tenth volume of the series published in 1858; and the three parts, collected for separate issue, compose a thick imperial quarto volume, of 550 pages of letter-press and fifty plates. The work remains the principal if not the only

*A notice of Dr. Harvey in the Athenæum states, quite erroneously, that "he also at this time made a tour around the shores of the Pacific, visiting Oregon and California."

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guide to the American student of *Algæ*, and one of the most popular as well as useful of the very various contributions to knowledge which the well-managed bequest of Smithson has given to the world.

Before the last part of the *Nereis Boreali-Americana* was published, Professor Harvey had sought a wider field of scientific labor and observation. Obtaining a long leave of absence, and some assistance from the university in addition to the continuance of his salary, he left England in August, 1853, by the overland route for Australia, stopping at Aden and Ceylon to collect; he visited the east, south, and west coasts of Australia, as well as Tasmania. Taking advantage of a missionary ship which was to cruise among the South Sea islands, and which offered him unexpected facilities, he visited the Fiji, Navigators', and Friendly islands, touching also at New Zealand. Returning to Sydney he sailed to Valparaiso, which he reached much prostrated through over-exertion in a warm climate; and when recuperated he returned home by way of the Isthmus, arriving in October, 1856. The algological collections of these three laborious years, or the Australian portion of them, formed the subject of Professor Harvey's third great illustrated work, and one of the most exquisite of the kind, the *Phycologia Australica*, the serial publication of which began in 1858, and was concluded in 1863, in five imperial octavo volumes, each of 60 colored plates. All but the last century of plates were put upon stone by the author.

Upon Dr. Harvey's return, in 1856, from his long expedition, he found the chair of botany in the University of Dublin vacated by the appointment of Dr. Allman to that of natural history in the University of Edinburg, and he was at once preferred to the position which he had sought when younger and freer, and which he now occupied till his death. The exhausting duties of this chair, and of that which he still held in the Royal Dublin Society, undiminished by the transference to the Government Museum of Irish Industry, did not prevent Professor Harvey from entering with unabated ardor upon an undertaking of greater magnitude than any preceding one. This was the *Flora Capensis*, a full systematic account of all the plants of the Cape Colony and the adjacent provinces of Caffraria and Natal, in which he was associated with Dr. Sonder, of Hamburg. Three thick octavo volumes of this work have appeared, the last in 1865, including the *Compositæ*. Along with this Dr. Harvey—learning for the purpose another form of lithographic drawing—brought out, between the years 1859 and 1864, two volumes of his *Thesaurus Capensis, or Illustrations of the South African Flora*, comprising 200 plates of interesting phænogamous plants. A complete list of his publications would include several contributions to scientific periodicals, mainly to Hooker's Journal of Botany, and a few miscellaneous writings.

In April, 1861, Dr. Harvey married Miss Phelps of Limerick. If not robust, he was apparently in good health, in the full maturity of his powers, and, it was hoped, only at the noonday of his allotted course of usefulness. But ere the lecture season of that summer was over, an attack of hæmorrhage from the lungs gave notice of a serious pulmonary disease. Yet he seemed to recover from this almost completely; he resumed his stated work and gave his lectures as usual in 1863, and also in the spring of the following year, but with some difficulty. The winter and spring of 1864–5 were spent in the south of France, with only transient benefit. Returning to his home and his herbarium he worked on still at the Cape Flora, with cheerful spirit and feeble hands, until he could work no longer. Last spring he sought in Devonshire a milder air, and found a peaceful rest. "On Tuesday, the 15th of May, 1866, at the age of 55 years, he quietly breathed his last at the residence of Lady Hooker, the widow of his long attached friend Sir William J. Hooker, surrounded by kind and anxious relatives and friends, and was buried in the cemetery at Torquay, on Saturday the 19th of May."

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Dr. Harvey was one of the few botanists of our day who excelled both in phænogamic and cryptogamic botany. In algology, his favorite branch, probably he has left no superior; in systematic botany generally, he had now an eminent position. He was a keen observer and a capital describer. He investigated accurately, worked readily and easily with microscope, pencil and pen, wrote perspicuously, and, where the subject permitted, with captivating grace; affording, in his lighter productions, mere glimpses of the warm and poetical imagination, delicate humor, refined feeling, and sincere goodness which were charmingly revealed in intimate intercourse and correspondence, and which won the admiration and the love of all who knew him well. Handsome in person, gentle and fascinating in manners, genial and warm-hearted, but of very retiring disposition, simple in his tastes and unaffectedly devout, it is not surprising that he attracted friends wherever he went, so that his death will be sensibly felt on every continent and in the islands of the sea.

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JOURNAL OF PROCEEDINGS

OF

THE BOARD OF REGENTS

OF THE

SMITHSONIAN INSTITUTION.

WASHINGTON, *January* 20, 1869.

In accordance with a resolution of the Board of Regents of the Smithsonian Institution, fixing the time of beginning of the annual session on the third Wednesday of January in each year, a meeting was called for this day.

No quorum being present, the board adjourned to meet on Wednesday, 27th January, 1869, at 7½ o'clock.

WASHINGTON, *January* 27, 1869.

A meeting of the Board of Regents was held at 7½ o'clock p. m. at the Institution. Present, Hon. B. F. Wade, Hon. W. P. Fessenden, Hon. L. Trumbull, Hon. G. Davis, Hon. J. A. Garfield, Hon. J. V. L. Pruyn, Hon. R. Delafield, Hon. P. Parker, Rev. Dr. John Maclean, Hon. S. J. Bowen, and Professor Henry, the secretary.

Mr. Wade was called to the chair. The minutes of the last meeting were read and approved.

The secretary stated that since the last session, Mr. Sayles J. Bowen had been elected mayor of the city of Washington, and thereby became ex-officio a member of the board in place of Mr. Wallach, and that Professor Agassiz's term had expired, but a resolution reappointing him a Regent had passed the Senate.

General Delafield, in behalf of the Executive Committee, presented the annual account of receipts and expenditures for the year 1868, with estimates for the year 1869; which was read, and,

On motion of Mr. Pruyn, the report was adopted.

General Delafield also presented the following report relative to the Washington city canal, which was read:

Report of the executive committee on a resolution of the Regents of the Smithsonian Institution on the influences of the Washington city canal on the health of the population of the city, May 15, 1868.*

The executive committee, to which was referred the resolution of the Regents of the Smithsonian Institution of the 22d of April, 1868, instructing it to ascer-

* Senate Mis. Doc. No. 95, 40th Congress, 2d session.

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tain what measures are proposed to be taken by the city authorities of Washington in regard to the canal, so far as concerns the Smithsonian Institution, has examined the subject and now report, for the information of the Regents:

That the Washington city canal has been constructed under the authority granted by the following laws:

On the 1st of May, 1802, Congress passed an act incorporating the Washington Canal Company, to raise $80,000, and construct a canal from the Potomac to the Eastern Branch, to admit boats drawing three feet water to pass through the whole extent of said canal, with the right to charge and collect tolls and wharfage. If not so completed within five years, it was to revert to the United States.

This act seems to have expired by the failure of the company to execute the work, and on the 16th of February, 1809, Congress incorporated other parties, to raise $100,000, with the same title, to construct the canal through part of the city of Washington, as laid down on a plan of the city defining its limits, to admit of boats drawing three feet water to pass through it; and if, at any time, the canal shall become obstructed so that boats and scows drawing three feet water cannot pass through from the Potomac to the Eastern Branch, the company shall not collect tolls or wharfage, and all the rights under this act shall cease, unless the canal is completed within seven years from the passage of the act.

Before the expiration of this seven years, and on the 6th of May, 1812, Congress authorized money to be raised by lottery for completing the canal, rendering it navigable, and draining the marshes and low grounds contiguous thereto, and on the 7th of May, 1822, authority was granted by Congress *to the city* of Washington to contract with the canal company to change the direction of parts of the canal, to drain and dry the low grounds on the borders of Tiber creek.

On the 20th of May, 1826, the canal company was authorized to increase the width of the canal along the present boundary of the Smithsonian grounds, and elsewhere, to 150 feet in width, and also to construct basins; and within five years shall construct the canal through its whole length to contain water at least *one foot* in depth at ordinary low water.

On the 2d of May, 1831, the canal company sold all its interest to the city of Washington, which was conveyed by a deed dated the 23d of July, 1831; and on the 31st of May, 1832, Congress confirmed this sale, and enacted that all the right, title, interest, property, and estate of the Washington Canal Company are vested in the mayor, aldermen, and common council, for the aforesaid use, with the *proviso*, that the canal shall be finished and completed, of the breadth and depth and in the manner and within the time hereinafter prescribed, and not otherwise. The act then prescribes the width at different parts, and then that the canal, throughout its whole length and breadth aforesaid, and the basins, shall have a depth of *at least four feet water at all times*, and that the whole shall be walled on its sides, and made suitable for steam-vessels, to be used therein, and finished by the 1st of March, 1833, and in default, all the rights and privileges granted by this act shall cease and determine. No tolls or wharfage were allowed to be charged or collected whenever the canal was so out of repair as to impede the free navigation with four feet water. By the same act all the right, title, property, interest, and estate of the United States, of, in, and to that part of the public reservation designated as the mall, was vested in the city corporation, in fee, to be sold, and the moneys applied to the construction of the canal. A street of 80 feet wide on the south side, in addition to the 40 feet landing, was also authorized, and previous specified acts, conflicting with this act, were repealed.

On the 2d of March, 1833, Congress appropriated $150,000 to aid in fulfilling the objects and requirements of the act of 31st of May, 1832, provided the city corporation relinquished all title to the land vested in it by the 8th section of

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the act, and all the rights and privileges granted by the 8th, 10th, 11th, 12th, 13th, and 14th sections of said act.

On the 3d of March, 1849, Congress appropriated $20,000 for clearing out and deepening that portion of the canal which passes through and along the public grounds, provided the city expends a like sum in cleaning out and deepening the other portions.

On the 3d of March, 1851, Congress appropriated $20,000 for completing, clearing out, and repairing that portion of the canal which passes through and along the public grounds, provided the city expends a like sum in clearing and repairing the other portions.

On the 23d of February, 1865, Congress authorized the city corporation to lay taxes * * to introduce the necessary *sewerage and drainage facilities* under or upon the whole or any portion of any avenue, street, or alley.

On the 16th of February, 1866, a bill was reported in the House of Representatives creating a sewerage commission, with power to improve and regulate the Washington city canal, as may be necessary; and on the 6th of March an amendment to the bill of the 16th of February, 1866, was reported, limiting the number of commissioners to three, giving them power to adopt and lay down a complete and uniform plan of sewerage, as it may deem necessary and most advisable, with reference to the public health and general interest; the city to raise $150,000 to execute the work by contract, and the United States not to be responsible for an amount exceeding one-half the outlay or expenses incurred under this act. There was no further action on this bill or amendment.

About the same time, to wit, on the 7th of March, 1866, the Senate of the United States passed a resolution requiring the appointment of a board of United States engineers, to report a plan for improving the *canal and sewerage* of the city. This board, on the 2d of April, 1866, made a partial report for the temporary improvement of the *canal*, which the city authorities adopted, and appropriated $75,000 to carry into effect.

Such is all the legislation on this subject the committee has been enabled to find, up to the end of the year 1867; from which it appears the United States granted to a company the right to construct the canal in question, on certain conditions and for specified uses; that this company sold all its rights to the corporation of the city of Washington, and the United States approved the sale and transfer, granted additional rights, and exacted additional facilities, limiting the uses to navigation by steamers, barges, and scows over the whole surface and length of the canal and basins, from the Potomac to the Eastern Branch. No authority is found for converting the canal into a sewer or recipient for the sewerage matter of the city, nor can the committee find that the purposes of the canal for navigation have ever been carried into full effect. It would further appear that the city can make no sale, transfer, disposition, or change of its rights, interests in and uses of the canal, without the authority of the United States, and it may well be questioned whether or not the city has lost all its rights in the premises, by failing to make the canal navigable, and using it as a sewer and reservoir for the excreta from a large proportion of the population of the city.

PROPOSED ACTION.

On the 6th April, 1868, a bill was reported in the board of aldermen, granting to certain citizens all the rights now held by the city in the canal for a term of 30 years. It proposes to grant, for the sole use and benefit of the parties named, all the rights, &c., of the city to the canal, and all the rights conferred by the United States, under the act of the 31st May, 1833. The corporators are to narrow the existing canal, and deepen it to *one foot* at *low water*, and finish the same in June, 1873, and may collect tolls and dockage. The company shall extend all sewers now leading into said canal to the outer surface of the canal

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wall, and at no time interfere with the canal being used for sewerage. It was provided that this transfer, with the proposed modifications, be submitted to Congress for approval.

The mayor of the city, in a communication to Congress of the 23d April, 1866, states that the condition of the canal is such as to require an abatement of the *nuisance* caused by deposits from the sewers, while the bill now under consideration of the council greatly increases and prolongs this nuisance.

The committee concurs in the opinion of the mayor of the city that the proposed grant of the canal to a private corporation would be a grievous injury to the inhabitants of the city, and would defeat the much-desired object of both Congress and the community of securing the health of the city.

The committee learns from the mayor that it is proposed to extend the Chesapeake and Ohio canal from Georgetown, through the city, to the deep water along the Eastern Branch, with the view of establishing a shipping port for large vessels, and depot for the Cumberland coal, thus sharing with Georgetown and Alexandria the profits of this branch of industry. The project is one to which the committee should present no objection, provided it does not interfere with the general health of the city, or works necessary for promoting the health of the inhabitants.

The committee considers that a canal for such a purpose, or any other, through this city, should not lock down to tide-water until it has passed entirely through the city, and recommends that neither the existing canal, the proposed modifications, nor transfer of the existing canal to any private corporation, be approved by Congress unless the subject of public health and sewerage be first provided for, and insured against all hindrance and interruption for all time to come, and that no sewage matter be allowed to enter *any open canal whatever*, within the limits of the District of Columbia.

INFLUENCE OF THE CANAL ON THE HEALTH OF THE POPULATION.

At the present time the Washington city canal is an extended cesspool, the bottom of which is below the level of low water, the surface varying with the slow and gradual rise and fall of the tide, without any current to act upon the bottom or of sufficient velocity to move insoluble ponderous matter that is received into it.

The sewage from the water-closets, kitchens, laundries, stables, cattle-pens, and street gutters is now received into this immense trap, there to remain, without power of any kind to carry it into the river or other place to protect the city against its pernicious effects and influences. The existing sewers now enter this reservoir so much below low water as to have caused one-half their entire height to be closed by deposit, and as a consequence filling every such sewer with poisonous matter into the city to the level of the intersection of the water in the canal with the inclined plane of the bottom of the sewer. This mass cannot be removed by any means now available. On the supposition that the canal receives the sewage from a population of only 30,000 of the inhabitants of the city, the estimated annual cubic mass that is thrown into the canal is not less than 300,000 cubic feet, or at the rate of 10 cubic feet per head per annum of solid and fluid human excrement.

This fecal matter has for some years past been accumulating in the canal, in proportion to the extent and number of sewers constructed from time to time, without any power of removal of the solid parts, and only a slight power for moving the fluid portions backwards and forwards, there being no continuous current to force even the fluid and soluble parts into the Potomac or Eastern Branch.

From the experience of other cities, and the investigations of chemists and engineers, we learn that open sewers, as the canal in this city, evolve gases very

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prejudicial to health. Observation has shown that the death rate is much greater among the population along these open sewers than in streets removed but a short distance from them.

The signs of animal life visible to the naked eye in small rivers after receiving sewage matter consists of myriads of minute worms, characteristic of all sewage water, and may be regarded as the last remains of animal life which can survive in such a locality; and even these die off in summer.

The putrescence of the organic liquids and deposits in the open sewers and bottoms and beds of streams in all weathers, and the evolution of noxious gases therefrom, lead to the sensible contamination of the surrounding atmosphere, and consequently decreases the purity and healthiness of the air, and the discharge of sewage matter into streams and small rivers pollutes the water by the mixture of much organic matter in a state of active putrescence.

Analysis gives 15 to 80 grains per gallon of suspended matter, and from 35 to 76 grains of dissolved matter, of the sewage of large towns. Of the former about 35 per centum is organic, and of the latter about 28 per centum. The organic matter consists of vegetable and animal fibre with a soluble extractive in a high state of decomposition. The organic constituents give off such an abundance of foul gases that they are a constant source of annoyance. These gases consist of about 73 per centum of light carburetted hydrogen, 16 per centum of carbonic acid, 10 of nitrogen, and traces of sulphuretted hydrogen, ammonia, and a putrid, organic vapor that is in the highest degree offensive.

Every gallon of sewage will discharge from 1¼ to 1½ cubic inches of this gas per hour, and the fermentation continues for weeks. Whenever this gas escapes from privies, cesspools, or sewers, it causes disease, and finally sets up a putrid form of fever which is exceedingly fatal.

Every effort is made elsewhere to prevent the diffusion of these fœtid gases into the houses and public ways, while in Washington we promote the evil to an incalculable extent and danger in that vast fermenting vat, the city canal.

It follows that the sewage of large populous cities and towns can only be conducted into large rivers near the sea, that they may not contaminate the atmosphere, and should never be discharged into fresh-water streams used or required for man or beast.

If conducted into closed harbors or bays, they create such a deadly pollution as soon to lead to the most alarming consequences.

The magnitude of this evil, and the suddenness with which it may come upon us in its most fatal form, are exemplified by the experience of London. The committee asks attention thereto, as fully illustrating the evil we have to combat in this city, and the necessity of prompt attention:

"On the introduction of the water-closet system in London, and the abolition of cesspools, with the increase of gas-works, the Thames began to give indications of receiving a larger quantity of decomposing matter than it could purify or get rid of by the tide movement. In 1856 it became apparent in the summer months that the river emitted a disagreeable stench. This became still more evident in 1857, and was obviously dependent on the increased attention paid to the removal of all refuse from houses by the aid of drainage. In 1858 the stench appeared with increased intensity, and especially in the neighborhood of the new houses of parliament. Every one felt it was necessary to meet so gigantic an evil. The river had become one elongated cesspool, and the effect upon the teeming population of its banks might be in a short time of the most disastrous kind. In 1858 an act was passed for preventing, as far as practical, the sewage from passing into the Thames within the metropolis, giving authority to expend three millions of pounds sterling to effect the object."

This experience may very properly be received as a truthful representation of what is being done in this city, and the consequences.

The specific gravity of sewage gases is lighter than that of the atmosphere

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Generated in large volumes in the canal, and lower end of as well as in the sewers, it ascends the sewers to escape at every higher level, and creates the pestilential influences heretofore referred to. We had some experience in this city in 1857, causing death and prolonged disease among the inmates of one of our hotels. Thus the deleterious gases ascend and the poisonous liquids descend, making the ventilation of the sewers as important as conveying away the solids and liquids to insure the health of the city. No system of cleansing sewers by manual labor is justifiable.

Laborers employed in this disgusting business in the culverts for fluid excrements, as in the Paris system, are subject to two terrible diseases, both due to the deadly effluvium of fæces, the one caused by ammonia gas, creating distempers of the nose and eyes, and the second by sulphuretted hydrogen, nitrogen, and hydrosulphuretted ammonia, causing sudden death. In the sewers for fluid and solid excrementa, as in London and Washington city, the effects are even more fatal. In the report of the engineer relating to the London sewers, it is stated that he witnessed several cases of death, and others in which men were taken out insensible, after only a few seconds' exposure. In Warwick street, Pimlico, five men were killed, in 1852, by this gaseous sewage. Three of them had gone into the sewer early in the morning, and, not returning for breakfast, alarm was felt for their safety. A surgeon entered the sewer and was killed on the spot. A young policeman followed and was struck dead in a few minutes. On examination after death it was shown that he could not have made more than two respirations before death after entering the sewer. On making an opening from the street into the sewers to get the bodies of these men, the gases as they escaped were set fire to by a match and burnt with a yellow flame, rising twenty feet. Within three months of the date of the engineer's report three more lives were lost near Whitechapel by breathing sewage gases as it escaped from an opening made into another sewer.

It is now a well-established fact, deduced from the medical statistics of the English armies in India, and of our army in its marches during the past two years, that cholera is propagated mainly by atmospheres contaminated and poisoned by the excrement of cholera patients.

In this city the canal would be the reservoir for such matter, first to be contaminated by travellers from infected districts, sojourning temporarily at the hotels, all the sewers from which now or are hereafter to empty in the canal.

The committee is of the opinion that the canal, as it now exists, is a great cause for creating and propagating disease, and should at the earliest possible moment be filled up and discontinued for use as a sewer and reservoir for excrement and waste waters of kitchens, water-closets, laundries, and other sources of contaminating matter, and is also of the opinion that, if the proposition of granting the city rights to this canal be confirmed, the evils herein set forth cannot be efficiently corrected by any means left in the power of the public authorities without incurring a heavy expenditure to purchase rights and property now proposed to be given away.

It is proper to state that part of this system of sewage, and, it is believed, the commencement of making the canal a reservoir and cesspool, was made under appropriations of Congress for building sewers from the Capitol and the executive buildings from Fifteenth to Seventeenth streets.

REMEDIES FOR THE EXISTING EVILS.

The committee has pointed out the probable evil consequences of our existing system of sewage, as a result of using the canal as a cesspool and reservoir for the fecal matter, from whence it cannot be removed by any existing means. It has also shown that the air and water from the canal are contaminated by the sewerage of the city, and produce fatal diseases tending to virulent epidemics, and that the canal is neither fit for navigation, sewerage, or drainage, in its present form and dimensions.

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It remains for the committee to propose some method by which these evils may
remedied.

The old, thickly populated cities and towns of Europe have been compelled,
r self-preservation, to expend millions of money, and adopted a variety of sys-
ms to remove excrement from the limits of their abodes.

The systems last adopted for Paris and London, at an immense outlay, give in
neral the main reliable features of the most acceptable plans.

In Paris metallic vessels for every family are so arranged that the solid fæces
e separated from the urine. The latter passes into street sewers of large
mensions, conducting it, with the surface drainage from the streets, into the
ine, and the solids are removed from the dwellings by scavengers with carts,
d conveyed some miles from Paris, where it is converted into dry poudrette and
ld for manure. No less than 278,000 cubic metres of these solid excrementa
re collected from the tenements in Paris and removed to La Vilette for con-
sion into fertilizing matters in one year.

In London a system commenced in 1859 of sewers at different levels, running
allel with the Thames, receives all the house and street drainage, both solid
d fluid, and conducts the same, miles below the city, into the river, to find its
y to the sea. These longitudinal sewers drain the entire city surface of 117
are miles, and are together 82 miles in length. Their fall does not exceed
o feet per mile, and are carried over rivers, railways, roads, and streets, by
ought-iron aqueducts. Of the surface thus drained 25½ square miles are below
level of high water, and drained by a sewer of 10 miles in length. A part
the sewerage, or 14½ miles of this surface, has to be pumped up 17½ feet to
charge it into the Thames; and at what is called the Abbey Mills Station, the
ole mass of sewage is pumped up 36 feet to the level of the outfall sewer.
is system is peculiar in having culverts parallel with the river, to receive the
vage at high levels as far as practicable, and not allow it to fall into basins or
lleys below the river surface, and by steam pumps raising all the sewage mat-
from surfaces below the river level into the main drains leading to the river.

Another system is advocated, by which all the excrementa is received from the
ter-closets, both solid and fluid, into small boxes in the streets, from whence
drawn by pneumatic portable engines into tight barrels, and thence in its
uid state distributed in drills underground by ploughs, as a manure for the sur-
nding country. It is claimed to be the only effectual way of removing this
nsive matter and preserving the whole of it for manuring the soil.

With subsoil ploughing, rotation of crops, lime, marl, green sand, barn-yard
nure, guano, and other fertilizers, the use of sewage matter is not likely to be
eptable to our agriculturists, and no demand will probably exist sufficient to
orb the quantities that by this system must be daily disposed of in summer
winter.

The committee has come to the conclusion that we must construct the sewers
the city of Washington on levels *above high water*, and conduct them to dis-
rge their contents in the strong *ebb current* of the Potomac river at *high water*,
t the entire accumulation of twelve hours may have six hours of ebb tide to
y it towards the Chesapeake, which, with the annual freshets and constant
w of the Potomac, will always carry it beyond the distance it can be brought
k by the flood.

It is indispensable the outlet of these main sewers should be *below the Long
dge*, (and as distant as practicable,) otherwise all the solid matter would accu-
late on the shoals between this bridge and Georgetown, and in time create as
at an evil as the canal.

To effect this object all the main sewers must be *carried across the site of the
sent canal* on *closed aqueducts or causeways*, at the most advantageous levels
ve high water, and thence under the grounds south of the canal, to suitable
ces on the bank of the river, where closed and covered reservoirs may be con

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structed to retain the sewage until the ebb-tide makes, when gates or valves will be opened to allow it to escape into the river, under the water surface, using the waters of Rock creek and the Tiber to cleanse them.

The present canal should then cease to be used for any other purpose than as an escape for the waters of the Tiber during extraordinary freshets, and for such surface drainage as cannot be carried across it into the sewers leading to the Potomac, and to this end must be filled up and reduced in size and form to an arched culvert. The proposed canal for commercial purposes, with an outlet in the Eastern Branch, should, in like manner, be carried over the valley of the present canal on an aqueduct or causeway, and then through or along the high ground to the Eastern Branch.

We have found that the canal is not useful for navigation. A railroad over the same ground, extended along the river front, with turn-outs and sidings to warehouses and depots, free to every owner of a car, would better subserve the public welfare, it is believed, than any water transportation that can be derived from the existing or other canal. Such a road for heavy traffic, with a well-constructed paved street for light vehicles, and a paved walk along the south side, adjacent to the public reservations, connecting the Capitol, botanic garden, Smithsonian, agricultural, and Washington monument grounds with the grounds about the President's house, would insure greater health, promote public convenience, and greatly enhance the value of property now separated from the settled portions of the city by an impassable barrier. These are additional considerations for using the site of the existing canal as a covered drain or culvert for surface water only.

The committee has confined itself to pointing out the evil effects of the existing sewerage, the necessity for immediate correction, and a general plan therefor, leaving it for the talent and genius of the most experienced engineers to select the most advantageous sites for the outlets of the sewers, at the most *distant points* from dense population, and mature the details of a project for carrying this system into effect.

All of which is respectfully submitted by

RICHARD DELAFIELD,
For the Committee of the Regents.
RICHARD WALLACH, *Mayor.*
RICHARD DELAFIELD, *U. S. Army.*
PETER PARKER, M. D.

WASHINGTON, D. C., *May* 15, 1868.

After discussion, and the unanimous expression of opinion that the canal was a nuisance which should speedily be abated, on motion of Mr. Pruyn the following resolution was adopted:

"*Resolved*, That the report of the executive committee be accepted, and that the committee be authorized, in their discretion, to unite with the corporate authorities of Washington in a memorial to Congress for such relief as may eventually lead to an abatement of the nuisance complained of."

On motion of General Delafield, it was

"*Resolved*, That the vacancy in the executive committee be filled by the election of Rev. Dr. John Maclean."

Professor Henry presented his annual report of the operations of the Institution during the year 1868, which was read, accepted, and ordered to be presented to Congress.

On motion of General Garfield, it was

"*Resolved*, That the regents renew their application to Congress to increase the annual appropriation for the care of the government collections to $10,000."

The board adjourned, to meet at the call of the secretary.

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JOURNAL OF PROCEEDINGS

OF

THE BOARD OF REGENTS

OF THE

SMITHSONIAN INSTITUTION.

WASHINGTON, D. C., *February* 3, 1870.

A meeting of the Board of Regents of the Smithsonian Institution was held on Thursday, February 3, 1870, at 7 o'clock p. m., at the Institution.

Present: Chief Justice Chase, Chancellor of the Institution, Messrs. Hamlin, Trumbull, Poland, Cox, Maclean, Delafield, Parker, and the secretary.

The minutes of the last meeting were read and adopted.

Professor Henry, the secretary, announced that Hon. Hannibal Hamlin, of the Senate, had been appointed a Regent, *vice* Mr. Fessenden, deceased; that Hon. James A. Garfield and L. P. Poland had been reappointed from the House of Representatives; and that Hon. S. S. Cox had been appointed, *vice* Mr. Pruyn, whose term had expired.

The secretary announced the death of Charles Armistead Alexander, esq., a valued collaborator of the Institution, whose series of spirited translations of the eulogies of eminent men, delivered before foreign academies, have added much value to the annual reports of this establishment, and have been received in several cases with much commendation by the original authors.

On motion of Dr. Maclean, it was

Resolved, That the Regents of the Smithsonian Institution recognize, in the death of Charles A. Alexander, esq., the loss of a valued collaborator, and that they sympathize with his friends and relatives in the bereavement to which they are subjected.

The secretary presented a general statement of the financial condition of the Institution.

General Delafield presented the annual report of the Executive Committee relative to the receipts and expenditures during the year 1869, and the estimates for the year 1870, which was read and accepted.

On motion of Dr. Maclean the secretary was directed to have an insurance effected on the east wing and range of the Smithsonian building to such amount as he may think necessary.

The secretary presented the eulogy on the late Professor A. D. Bache, which was received and ordered to be printed in the annual report.

General Delafield, for the Executive Committee, reported that they were still collecting facts and statistics relative to the city canal, and would hereafter present a further report.

The secretary stated that it was his painful duty to announce that since the last meeting of the Board the death had occurred of one of its most distinguished members—the Hon. William Pitt Fessenden.

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Appropriate remarks were then made relative to the services, character, and virtues of the deceased, by Messrs. Trumbull, Hamlin, Parker, and the Chancellor, Chief Justice Chase.

On motion of Mr. Trumbull the following resolutions were adopted:

Resolved, That the Board of Regents of the Smithsonian Institution deeply mourn the loss of their distinguished fellow-regent, William Pitt Fessenden.

Resolved, That in the death of Mr. Fessenden our country has lost a refined and influential citizen, the Senate of the United States an able, judicious, honest statesman, and this Institution an active, intelligent, and learned Regent.

Resolved, That we sincerely condole with the afflicted family of Mr. Fessenden, and offer to them our heartfelt sympathy in their great bereavement.

Resolved, That a copy of these resolutions be communicated by the Secretary of the Smithsonian Institution to the family of the deceased.

Resolved, That Chief Justice Chase be requested to prepare a eulogy on Mr. Fessenden, for insertion in the journal of the Board of Regents.

General Delafield in behalf of the Executive Committee, stated that they deemed it highly important for the interests of the Institution in the promotion of science, and due to the secretary for his long and devoted services, that he should visit Europe to consult with the savans and societies of Great Britain and the continent, and he therefore hoped that a leave of absence would be granted to Professor Henry for several months, and that an allowance be made for his expenses.

On motion of Dr. Maclean, it was unanimously—

Resolved, That Professor Henry, Secretary of the Institution, be authorized to visit Europe in behalf of the interests of the Smithsonian Institution, and that he be granted from three to six months leave of absence, and two thousand dollars for traveling expenses for this purpose.

Judge Poland moved, that in consideration of the extra services which had been rendered by Mr. Rhees, chief clerk, since the death of Mr. Randolph, bookkeeper of the Institution, in auditing and keeping the accounts for the last three years, he be allowed $350, in addition to $250 already received, or $200 per year.

This proposition was advocated by the secretary, who considered it just not only in regard to the particular services in question, but also for his efficiency in the conduct of the general business of the establishment.

The motion was agreed to.

Adjourned to meet on the 10th instant, at 7 o'clock.

WASHINGTON, D. C., *February* 10, 1870.

A meeting of the Board of Regents of the Smithsonian Institution was held on Thursday, February 10, 1870, at 7 o'clock p. m., at the Institution.

Present, Messrs. Chase, Trumbull, Hamlin, Davis, Garfield, Poland, Delafield, Parker, Bowen, and the Secretary.

The Chancellor took the chair.

The minutes were read and approved.

Professor Henry presented his annual report, which was accepted.

On motion of General Garfield, it was—

Resolved, That the Executive Committee and the secretary be directed

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to prepare a detailed statement of all the money expended on the museum during the past year, distinguishing between the items directly and exclusively chargeable to the care of the collections of the Government, and those of a contingent or indirect character.

Mr. Hamlin presented the following, which were adopted:

Having learned that the chief clerk of this Institution, Mr. William J. Rhees, is about to resign the office he has filled for seventeen years, to engage in an active business enterprise—

Resolved, That the Board of Regents highly appreciate his worth as a man, and his services as an officer of this Institution.

Resolved, That while they regret his resignation of an office which he has filled with honor to himself and advantage to the Institution, they hope that he may be equally successful in the career on which he is about to enter, and that a copy of these resolutions be presented to him by the secretary.

The Board then adjourned to meet at the call of the secretary.

[NOTE.—After this meeting the annual report was submitted to Congress and ordered to be printed; therefore, the subsequent proceedings of the Board for the session of the beginning of 1870 will be found in the next annual report.—J. H.]

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JOURNAL OF PROCEEDINGS

OF

THE BOARD OF REGENTS

OF THE

SMITHSONIAN INSTITUTION.

WASHINGTON, *May* 23, 1870.

A meeting of the Board of Regents was held this evening, at the call of the Secretary. Present: Hon. L. P. Poland, Hon. L. Trumbull, Hon. J. A. Garfield, Hon. S. S. Cox, General Delafield, Hon. Peter Parker, Rev. Dr. J. Maclean, and Professor Henry, the Secretary.

In the absence of the Chancellor, Judge Poland was called to the chair.

The Secretary presented the report of the expenditures on account of the Government collections for the year 1869; and, on motion of General Garfield, it was resolved that the Board of Regents apply to Congress for an appropriation of $10,000 for the care of the Government collections during the year 1870.

Professor Henry stated that the resolution of the board adopted at the meeting of February 3, 1870, authorizing him to visit Europe, had been entirely unexpected to him, as he had received no intimation previous to its being offered that it was in contemplation; that he had concluded to avail himself of the resolution, and that he was making preparations for his departure on the 1st of June; that he intended to make arrangements for the operations of the Institution which were to be carried on during his absence; that he intended to settle all the accounts which would be due at the time of his departure; to deposit checks for the salaries accruing during his absence, to be paid on the indorsement of Professor Baird; and also to deposit to the credit of that officer $2,000, to pay transportation and incidental expenses; that he had been much gratified with the expressions of kind feeling which had been called forth by the announcement of his intended visit to Europe, and the offers which he had received from the Cunard and Bremen lines of steamers of a free passage across the ocean.

The board then adjourned.

WASHINGTON, *January* 18, 1871.

In accordance with a resolution of the Board of Regents of the Smithsonian Institution, fixing the time of the beginning of their annual meet-

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ing on the third Wednesday in January of each year, the Board met this day in the Regents' room.

No quorum being present, the Board adjourned to meet on Thursday, January 26.

WASHINGTON, *January* 26, 1871.

A meeting of the Board of Regents was held at 7 p. m. in the Regents' room. Present: Hon. H. Hamlin, Hon. L. P. Poland, Hon. J. A. Garfield, Hon. M. G. Emery, Hon. P. Parker, Rev. Dr. J. Maclean, and the Secretary, Professor Henry.

In the absence of the Chancellor, Mr. Hamlin was called to the chair.

The minutes of the last meeting were read and approved.

The Secretary mentioned his visit to Europe, and stated the fact that it had been highly satisfactory in regard to the foreign correspondents of the Institution and the estimation in which the establishment is held in the Old World.

Whereupon, on motion of General Garfield, he was requested at some future meeting to give a detailed account of his tour, particularly in its relation to the operations of the Institution.

The Secretary gave an account of the operations of the Institution since the last meeting of the Board. He stated that in accordance with the resolution of the Board adopted at the meeting of February 3, 1870, he had effected an insurance of $10,000 on the east wing and range of the building, at 66⅔ per cent.; that Congress has appropriated $10,000 for the care of the Government collections for the year ending June 30, 1871, of which $5,024 has already been drawn; that Congress has also appropriated $10,000 toward the completion of the upper hall, which sum is to be expended under the direction of the Secretary of the Interior, who has directed the Architect of the Capitol (Mr. E. Clark) to oversee the work.

The Secretary read a letter from the agents of the Anchor Line of steamers, offering to carry the Italian exchanges of the Smithsonian Institution by their vessels free of charge.

On motion of General Garfield, the Secretary was directed to present the thanks of the Board to the agents of that line, and also to the agents of the lines that had offered him a free passage to Europe.

Dr. Maclean stated that the majority of the executive committee had decided to alter their report for 1869 to conform to the mode previously adopted.

The Secretary stated that the business of the Institution had of late years so much increased that it was no longer possible to conduct it without further assistance. That this was the case would be evident from the following statement:

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The Institution has now upwards of 1,800 foreign correspondents connected with the exchanges. It has 400 regular meteorological observers. It is in communication with almost all the colleges, libraries, literary, and scientific societies in America, besides being continually called upon by individuals in every part of the country for information on scientific subjects. It publishes annually upward of a thousand printed pages, requiring much labor in correcting copy, reading proof, and attending to the details of printing, binding, &c. Its system of international exchanges, exclusive of the correspondence, involves a large amount of time and labor in doing up and directing the separate packages sent away, and in receiving and distributing those from abroad. Several thousand volumes are annually received from foreign and domestic exchanges, which are all recorded at the Institution previous to being deposited in the Library of Congress. The arrangement of the material constantly received from the meteorological observers, supplying them with blanks and instructions, occasions another draught on the labors of the working corps of the Institution.

The continual repairs and care of the building are another item requiring supervision, besides the reconstruction of the parts of the edifice destroyed by the fire. But above all, the entering and care of the thousands of specimens which are constantly received, their assortment, and distribution of duplicates, is sufficient to occupy the entire time of a separate corps of assistants. It may be said with truth that in no institution has more work been done with a smaller number of persons than at the Smithsonian.

The difficulty in carrying on the operations of the Institution had been increased since the last meeting of the Board by the resignation of Mr. Rhees, who had held the position of chief clerk for seventeen years. He had, however, lately learned that Mr. Rhees might be induced to return to his former position, to which the Secretary desired to recall him.

On motion of General Garfield, it was

Resolved, That the Secretary be allowed to appoint a permanent assistant as chief clerk, at a salary not to exceed $175 per month.

General Garfield presented a letter from General Delafield, tendering his resignation as a Regent of the Smithsonian Institution.

Mr. Poland offered the following resolution, which was adopted unanimously:

Resolved by the Board of Regents, That they entertain the highest appreciation of the services of General Richard Delafield as a member of the Board, and especially as a member of the executive committee, and greatly regret the loss caused by his resignation, and desire to express to him, upon his retirement, their strong personal regard.

Dr. Parker presented the report of the executive committee for 187[illegible] which was read and accepted.

The board then adjourned to meet at the call of the Secretary.

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WASHINGTON, *March* 9, 1871.

A meeting of the Board of Regents was held this evening at 7 o'clock. Present: Hon. H. Hamlin, Hon. L. P. Poland, Hon. S. S. Cox, Hon. P. Parker, General W. T. Sherman, and the Secretary, Professor Henry.

Judge Poland was called to the chair.

The minutes of the last meeting were read and approved.

The Secretary stated that by joint resolution of Congress, Genera William T. Sherman had been elected a Regent for the term of six years, *vice* Richard Delafield, resigned.

On motion of Mr. Hamlin, the vacancy existing in the executive committee was filled by the election of General Sherman.

The Secretary called attention to the fact that the mayor of the city of Washington was *ex officio* a Regent, but that under the new territorial government the office of mayor ceased, and suggested the propriety of action by Congress to substitute the governor of the Territory as the *ex officio* member of the board.

Messrs. Hamlin and Poland expressed their intention to bring the subject before Congress immediately, and anticipated no objection to the passage of an act providing for the change contemplated.

The Secretary gave an account of the improvements now being made in the building under the appropriation by Congress. The new hall would soon be finished, and it was proposed to devote it mainly to ethnology. Mr. B. Waterhouse Hawkins had been employed to prepare illustrations of extinct animals, &c., to decorate the walls.

The Secretary called attention to the books belonging to James Smithson, the founder of the Institution, and requested some action in relation to the best manner of their preservation. It was thought proper to preserve them in a metallic case with plate-glass front, open to the view of the public, but not to be taken out by any one.

The Secretary presented his annual report for 1870, which was read and accepted.

The board then adjourned *sine die*.

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EULOGY ON PROF. ALEXANDER DALLAS BACHE, LATE SUPERINTENDENT OF THE UNITED STATES COAST SURVEY.

By Prof. Joseph Henry.

Prepared at the request of the Board of Regents of the Smithsonian Institution, and also of the National Academy of Sciences.

Alexander Dallas Bache, whose life and character form the subject of the following eulogy, was the son of Richard Bache, one of eight children of Sarah, the only daughter of Dr. Benjamin Franklin. His mother was Sophia Burret Dallas, daughter of Alexander J. Dallas, and sister of George M. Dallas, whose names are well known in the history of this country, the former as Secretary of the Treasury, and the latter as Vice-President of the United States, and subsequently as minister to the Court of St. James.

The subject of our sketch was born in Philadelphia, on the 19th of July, 1806. At an early age he became a pupil of a classical school, and was distinguished by an unusual aptitude in the acquisition of learning. Shortly before arriving at the age of fifteen he was appointed a cadet at the National Military Academy at West Point. Here, though the youngest pupil, he soon attained a high grade of scholarship, which he maintained during the whole of his course, and was finally graduated in 1825, at the head of his class. His merit was in this case the more conspicuous, inasmuch as the class is shown to have been one of unusual ability, by having numbered no less than four successful candidates for the honor of adoption into the Corps of Engineers. It has been mentioned as a solitary instance in the history of the Academy, noted for its rigid discipline, that young Bache passed through the entire course of four years without having received a mark of actual demerit, and, what is perhaps not less uncommon, without having called forth the least manifestation of envy on the part of his fellow-pupils. On the contrary, his superiority in scholarship was freely acknowledged by every member of his class, while his unassuming manner, friendly demeanor, and fidelity to duty secured him the affection as well as the respect of not only his fellow-pupils, but also of the officers of the institution. It is also remembered that his classmates, with instinctive deference to his scrupulous sense of propriety, forbore to solicit his participation in any amusement which in the slightest degree conflicted with the rules of the Academy. So far from this, they commended his course, and took pride to themselves,

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as members of his class, in his reputation for high standing and exemplary conduct. His room-mate, older by several years than he was, and by no means noted for regularity or studious habits, constituted himself, as it were, his guardian, and sedulously excluded all visitors or other interruptions to study during the prescribed hours. For this self-imposed service, gravely rendered as essential to the honor of the class, he was accustomed jocularly to claim immunity for his own delinquencies or shortcomings. But whatever protection others might require on account of youth and inexperience, young Bache needed no guardian to keep him in the line of duty. Impressed beyond his years with a sense of the responsibility which would devolve upon him as the eldest of his mother's family, entertaining a grave appreciation of the obligations involved in his education at the National Academy, he resolved from the first to exert his energies to the utmost in qualifying himself for the duties which he might be called upon to discharge, whether in professional or private life. Nor was he uninfluenced in this determination by a consciousness that as a descendant of Franklin he was, in a certain degree, an object of popular interest, and that on this account something more than an ordinary responsibility rested upon him. On a mind constituted like his an influence of this kind could not but exert a happy effect.

The character which he established for gentleness of manner and evenness of temper was not entirely the result of native amiability, for when a child he is said to have been quick-tempered, and at later periods of his life, when suddenly provoked beyond his habitual power of endurance, he sometimes gave way to manifestations of temper which might have surprised those who only knew him in his usual state of calm deportment. These ebullitions were, however, of rare occurrence, and always of short duration. His marked characteristic was the control which he had acquired over his passions and feelings, and it was this which enabled him to suppress all tendency to self-indulgence, to pursue with unremitting perseverance the course he had marked out, to observe an undeviating regard for truth and justice, and to cherish habitually all that would tend to exemplify the kindlier affections of the heart.

Although young Bache was perhaps predisposed, from hereditary influence, to form correct habits and adopt high moral principles, yet these dispositions might have remained dormant had it not been for the early training and the watchful care of his noble mother. From his earliest days she checked with gentle reproof every indication of childish revolt against wholesome restraint, and steadily carried out her system of discipline so gently and yet so effectually that it met with scarcely any opposition, and left the conviction that she was always in the right. Her maternal solicitude did not end with his being placed under military rule, but was continued through his whole course by means of a ready pen. In the language of one who was permitted to

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read her letters to her son while at West Point, "nothing could be more admirable than the way in which, amid pleasant gossip and family news, she would inspire her son with high sentiments and encourage him to persevering industry."

As an illustration of his persistency of purpose, it is related that, when a recitation of more than common length or difficulty was to be prepared for the morrow, it was no unusual practice of his to place himself on a seat of unstable equilibrium, which by giving way when volition was about to lose its power recalled his flagging attention to the allotted task.

After graduating he was selected, on account of his scholarship, to remain at the Academy as an assistant professor. In this position, which gave him an opportunity to review his studies and extend his reading, he continued one year; when, at his own request, he was assigned to engineering duty under the late General, then Colonel, Totten, at Newport, Rhode Island. Here he remained two years, engaged in constructing fortifications, devoting his extra hours to the study of physics and chemistry, and, as a recreation, collecting and labeling the shells of that region. But the most important event of this period of his life, and that which, doubtless, contributed in a large degree to his future success, was his becoming acquainted with and subsequent betrothal to Miss Nancy Clarke Fowler, the daughter of an old and highly-respected citizen of Newport. With the stinted pay of a lieutenant of engineers, out of which his mother and her younger offspring were to be provided for, marriage was not to be thought of, excepting as an event in the remote distance. Fortunately as unexpectedly, however, a change now took place in his circumstances which enabled him to gratify the earnest wish of his heart and to secure to himself a companion and helpmate who lavished upon him all her affections, and through his life ardently devoted all her thoughts and energies to sustain, assist, and encourage him. The change alluded to, and which opened to him an uninterrupted career of usefulness during the whole of his active life, was the result of an invitation to the chair of natural philosophy and chemistry in the University of Pennsylvania, at Philadelphia. He accepted the position with that unaffected diffidence which is the usual concomitant of true but untried merit, though, as might have been anticipated, his eventual success was commensurate with the industry and ability which had marked his previous progress. Having already had some experience as a teacher, he the more readily gained the entire confidence of the authorities of the university and the affection of his pupils. He did not, however, rest satisfied with the occupation of teacher, or with merely imparting knowledge obtained by the labors of others, but sought to enlarge the bounds of science by discoveries of his own. As auxiliary to this, he became a member of the Franklin Institute, a society then newly established for the promotion of the mechanical arts. This society, which still maintains a vig-

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orous existence, was well calculated to exhibit his talents and develop his character. It brought him into intimate association with the principal manufacturers, engineers, and artisans of the city, and into relations of friendship with a large number of young men destined, in more advanced life, to exert an extended influence on public affairs. He was appointed chairman of one of the most important of its committees, and was chosen as the expounder of the principles of the institute at its public exhibitions. Facilities were thus afforded him for the prosecution of science, which he could not have well commanded in any other position. Workshops were thrown open to him, and skillful hands yielded him ready assistance in realizing the conceptions of his suggestive mind. His descent from the illustrious statesman and philosopher whose name the institute bears, and who is almost regarded as the tutelar saint of Philadelphia, no doubt contributed to a prepossession in his favor, but the influence which he acquired and maintained was due to his own learning, industry, ability, and courtesy. To these he owed the favor and distinction of having conferred upon him the principal directorship of the scientific investigations of the institute, and the opportunity which it afforded him of so greatly contributing to the usefulness of the society and to the advancement of his own reputation.

For a full account of the labors in which he was engaged in his connection with the Franklin Institute we must here be content with referring to the volumes of its journal from 1828 to 1835 inclusive. We may pause a moment, however, to notice the investigations relating to the bursting of steam-boilers, of which he was the principal director. The public mind had, at that epoch, been so frequently and painfully called to this subject that the institute was induced to organize a series of systematic researches in regard to it, the importance of which was soon recognized by the General Government in the form of an appropriation for defraying the attendant expenses. In the prosecution of these inquiries a large amount of information relative to explosions, and suggestions as to their causes, was first collected by correspondence, and on this was based a series of well-devised experiments, which were executed with signal address, and the results interpreted with logical discrimination. The conclusions arrived at were embodied in a series of propositions, which, after a lapse of more than thirty years, have not been superseded by any others of more practical value. The most frequent cause of explosion was found to be the gradual heating of the boiler beyond its power of resistance; and next to this, the sudden generation of steam by allowing the water to become too low, and its subsequent contact with the overheated metal of the sides and other portions of the boiler. The generation of gas from the decomposition of water as a cause of explosion was disproved, as was also the dispersion of water in the form of spray through superheated steam. These experiments were not unattended with danger, and required, in their execution, no small amount of personal courage. Accidents were immi-

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nent at almost every stage of the investigation; and in some instances explosions were produced which alarmed the neighborhood. So true is it that in the pursuit of science dangers are oftentimes voluntarily encountered, exacting no less courage or firmness of nerve than that which animates the warrior in the more conspicuous but scarcely more important conflicts of the battle-field.

The attention of Mr. Bache at this period was not exclusively devoted to his labors in connection with the Franklin Institute. He was also a member of the American Philosophical Society, and, as such, in association with Hare, Espy, and others interested in the pursuit of various branches of physics and chemistry. He erected an observatory in the yard of his dwelling, in which, with the aid of his wife and of his former pupil, John F. Fraser, he determined with accuracy, for the first time in this country, the periods of the daily variations of the magnetic needle, and by another series of observations the connection of the fitful variations of the direction of the magnetic force with the appearance of the aurora borealis.

Again, in connection with his friend, Mr. Espy, he made a minute survey of a portion of the track of a tornado, which visited New Brunswick, in New Jersey, on the 19th of June, 1835, and from the change of place and relative position of the trees and other objects, as left by the wind, he succeeded in establishing the fact, in accordance with the hypotheses of Mr. Espy, that the effects of the storm were due to an ascending and progressive column of air, by which all objects within the influence of the disturbance, on either side the track, were drawn inward, and not due, as had been supposed, to a horizontal rotation at the surface, which would tend to throw them outward by centrifugal projection. In coöperation with Professor Courtenay, he also made a series of determinations of the magnetic dip at various places in the United States. Indeed, terrestrial magnetism was with him a favorite subject, to which he continued to make valuable contributions at intervals during his whole life. The phenomena of heat likewise engaged much of his attention, and he was the first to show, contrary to generally-received opinion, that the radiation and consequent absorption of dark heat is not affected by color. His investigations in this line were suddenly brought to a close by an accident, which we may be allowed to mention as furnishing an illustration of his self-control and considerate regard for the feelings of others. After an expenditure of money which he could ill afford, and of time withdrawn from the hours due to repose, he had procured and arranged on a stand a series of delicate instruments intended for a long-meditated experiment on radiant heat. During his temporary absence his mother, in hurriedly passing through the apartment, accidentally caught in her dress the support of the apparatus and brought the whole to the floor, a mass of mingled fragments. The author of this disaster was so painfully affected by the destruction, of which she had been the unintentional cause, as to be

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obliged to leave to his wife the task of breaking the unwelcome tidings to her son. On receiving the information, he stood for a moment, perfectly silent, then hurried out into the open air to conceal his emotion and tranquilize his feelings. After a short interval he returned, calm, affectionate, and apparently cheerful, and neither by word nor look gave any indication of the pain and disappointment he had so severely experienced.

It should not be forgotten that the labors to which we have alluded were performed in hours not devoted to his regular duties as a professor in the university. To these he was obliged to give three hours a day, besides other time to the preparation of illustrations for his lectures, while several evenings of the week were claimed by committees of the Franklin Institute and the Philosophical Society. He was enabled to execute these multifarious labors by a division of his time into separate periods, to each of which was allotted its special occupation. By a rigid adherence to this system he was always prompt in his engagements, was never hurried, and found time, moreover, to attend to the claims of friendship and society. He was a zealous and successful teacher, to whom the imparting of knowledge was a source of unalloyed and inexhaustible pleasure. His pupils could not fail to be favorably impressed by his enthusiasm and influenced by his kindness. He always manifested an interest not only in their proficiency in study, but also in their general welfare. They regarded him with affection as well as respect, and while in other class-rooms of the university disorder and insubordination occasionally annoyed the teachers, nothing was to be witnessed in his, but earnest attention and gentlemanly deportment.

His success as an instructor affords a striking confutation of the fallacy which has not unfrequently been advocated in certain quarters, that men devoted to original research and imbued with habits of mind which it generates are not well qualified for the office of instructors. So far is the proposition from having any foundation in fact, that it is precisely among the most celebrated explorers of science of the present century that the most successful and noted teachers have been found. In proof of this the illustrious names of Priestley, De Candolle, Dalton, Davy, Oersted, Faraday, and a host of others, immediately occur. At the same time it cannot be denied that it is questionable economy to devote to the drudgery of drilling youth in the elements of knowledge, a mind well qualified by nature and training to enlarge the boundaries of thought and increase the stores of knowledge. But it is equally clear that the practice of teaching is, to a certain extent, not incompatible with the leisure and concentration of mind requisite for original research; that the latter must, in fact, act beneficially alike on the instructor and instructed; the former gaining in clearness of conception in the appreciation of the new truths he is unfolding by imparting knowledge of their character to others, while the latter catch, by sym-

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pathy, a portion of the enthusiasm of the master, and are stimulated to exertions of which they would otherwise be incapable.

In 1836, when Professor Bache had just attained the thirtieth year of his age, his attention and energies received a new direction, constituting, as it were, a new epoch in his life. This change was caused by a movement on the part of the trustees of the Girard College for Orphans, an institution munificently endowed by a benevolent citizen of Philadelphia. Preparatory to organizing this institution it was thought desirable to select a suitable person as president, and to send him abroad to study the systems of education and methods of instruction and discipline adopted in Europe. The eyes of the entire community were with one accord directed to our professor as the proper man for this office. He had, however, become enamored with the pursuit of science, and it was with difficulty that he could bring himself to regard with favor a proposition which might tend to separate him from this favorite object. The consideration of a more extended field of usefulness at length prevailed, and he accepted, though not without some lingering regret, the proffered position. No American ever visited Europe under more favorable circumstances for becoming intimately acquainted with its scientific and literary institutions. His published researches had given him a European reputation, and afforded him that ready access to the intelligent and influential classes of society which is denied the traveler whose only recommendation is the possession of wealth. It cannot be doubted that he was also favored in this respect by the admiration which in Europe still attaches to the name of his renowned ancestor.* He was everywhere received with marked attention, and from his moral and intellectual qualities did not fail to sustain the prepossessions in his favor and to secure the friendship and esteem of the most distinguished savants of the Old World.

He remained in Europe two years, and on his return embodied the results of his researches on education in his report to the trustees of Girard College. This report forms a large octavo volume, and is an almost exhaustive exposition of the scholastic systems and methods of instruction in use at the time in England, France, Prussia, Austria, Switzerland, and Italy. It has done more, perhaps, to improve the theory and art of education in this country than any other work ever published; and it has effected this not alone by the statement of facts derived from observation, but also by the inferences and suggestions

* The force of this sentiment was quaintly but strongly marked by a slight incident which occurred when he was in Germany. An elderly savant, on being introduced, clasped him in his arms, saluted him with a kiss on either cheek, and greeted him with the exclamation, "Mein Gott, now let me die, since I have lived to see with mine own eyes an emanation of the great Franklin!" This compliment was perhaps more flattering than agreeable, since the old professor in question was wont, after the fashion of his day, to stimulate his lagging faculties by frequent and profuse extractions from the snuff-box.

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with which it abounds. The accounts which are given of the different schools of Europe are founded on personal inspection; the results being noted down at the time with the writer's habitual regard to accuracy.

After completing his report he was prepared to commence the organization of the Girard College, but the trustees, partly on account of the unfinished condition of the building, and partly from a delay in the adjustment of the funds of the endowment, were not disposed to put the institution into immediate operation. In the mean time Professor Bache, desirous of rendering the information he had acquired of immediate practical use, offered his services gratuitously to the municipal authorities of Philadelphia, to organize, on an improved basis, a system of public education for that city. This offer was gladly accepted, and he commenced the work with his usual energy and with the cordial support of the directors and teachers of the common schools. At the end of the year, finding that the trustees of the college were still unprepared to open the institution, he relinquished the salary, but retained the office of president, and devoted his time mainly to the organization of the schools. He was now, however, induced to accept from the city, as the sole and necessary means of his support, a salary much less than the one he had relinquished. The result of his labors in regard to the schools was the establishment of the best system of combined free education which had, at that time, been adopted in this country. It has since generally been regarded as a model, and has been introduced as such in different cities of the Union.

In 1842, having completed the organization of the schools, and Girard College still remaining in a stationary condition, he resigned all connection with it, and, yielding to the solicitations of the trustees of the university, returned to his former chair of natural philosophy and chemistry, in order that he might resume the cultivation of science. Not that it is to be inferred that in his devotion to the advancement of education he had relinquished or deferred the scientific pursuits to which the habit of his mind and the bent of his genius continually impelled him, for during his travels in Europe he had been careful to provide himself with a set of portable instruments of physical research, and, as a relief from the labors imposed by the special object of his mission, he instituted a connected series of observations at prominent points on the Continent and in Great Britain, relative to the dip and intensity of terrestrial magnetism. These observations were made with the view of ascertaining the relative direction and strength of the magnetic force in Europe and America, by the comparison of parallel series of observations in the two countries with the same instruments. They also served, in most instances, to settle with greater precision than had previously been attained the relative magnetic condition of the points at which they were made.

Though the organization of the schools of such a city as Philadelphia might seem sufficient to absorb all his energy and self-devotion, yet

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even in the midst of this labor we find our late colleague actively coöperating in the great enterprise of the British Association to determine by contemporaneous observations, at widely separated points, the fluctuations of the magnetic and meteorological elements of the globe. This coöperation, in which no doubt a feeling of national pride mingled itself with his ardor for the advancement of science, consisted primarily in the establishment of an observatory, to which the trustees of Girard College contributed a full series of instruments, combining all the latest improvements, and which was supported by the American Philosophical Society, and a number of liberal and intelligent individuals. The observations which were here continued at short intervals, both by day and night, for five years, form a rich mine of statistics, from which, until within the last few years of his life, the professor drew a highly interesting series of results, without exhausting the material. In addition to these observations, he made during his summer vacations a magnetic survey of Pennylvania.

He was not destined to remain long in his old position in the university. Before he had become fairly settled in it and had renewed his familiarity with its duties, he was called in November, 1843, on the occasion of the death of Mr. Hassler, Superintendent of the United States Coast Survey, to fill the important sphere of public duty thus rendered vacant. His appointment to this position was first suggested by the members of the American Philosophical Society, and the nomination fully concurred in by the principal scientific and literary institutions of the country. In this movement he himself took no part, and indeed regarded the position as one not to be coveted; for while it opened a wide field for the exercise of talent and the acquisition of an enviable reputation, it involved responsibilities and presented difficulties of the gravest character. Professor Bache was not one of those who, abounding in self-confidence, imagine themselves equal to every exigency, or who seek the distinctions and emoluments of office without any regard to the services to be rendered or the duties to be discharged. On the contrary, though early and continued success must have tended to increase his self-esteem, each new position to which he was called was entered upon with feelings of solicitude rather than of exultation. He rightly judged that the proper moment for self-congratulation is not at the beginning of an arduous and precarious enterprise, but at the time of its full and successful accomplishment. Nor can it be necessary to add that this characteristic contributed largely to his success. In civil service as in the camp, the leader to whom all look with confidence is not he who, with blind and arrogant self-reliance, disdains caution as unworthy of courage, but he who, sensitively alive to the dangers to be encountered, exerts every faculty in calling to his aid every resource which may tend to secure victory or facilitate retreat.

With whatever misgivings Professor Bache may have undertaken the task to which he was assigned, it may be truly said that no living

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man was so well qualified as himself to secure the results which the nation and its commercial interests demanded. His education and training at West Point, his skill in original investigations, his thorough familiarity with the principles of applied science, his knowledge of the world, and his gentlemanly deportment, were all in a greater or less degree essential elements in the successful prosecution of the survey. It would appear as if the training and acquisition of every period of his life, and the development of every trait of his character, had been especially ordained to fit him in every respect to overcome the difficulties of this position. Besides the qualifications we have enumerated, he possessed rare executive ability, which enabled him to govern and guide the diverse elements of the vast undertaking with consummate tact and skill. Quick to perceive and acknowledge merit in others, he rapidly gathered around him a corps of men eminently well qualified for the execution of the tasks to which he severally assigned them.

The Coast Survey had been recommended to Congress by President Jefferson as early as 1807, but it was not until ten years afterward that the work was actually commenced, under the superintendence of Professor Hassler, an eminent Swiss engineer, whose plans had been previously sanctioned by the American Philosophical Society. Though the fundamental features of the survey had been established on the most approved scientific principles yet so frequent were the changes in the policy of the Government, and so limited were the appropriations, that, even up to the time of Professor Bache's appointment, in 1843, little more than a beginning had been made. The survey, so far as accomplished, extended only from New York Harbor to Point Judith, on the east coast, and southward to Cape Henlopen. The new Superintendent saw the necessity of greatly enlarging the plan, so as to embrace a much broader field of simultaneous labor than it had previously included. He divided the whole coast line into sections, and organized, under separate parties, the essential operations of the survey simultaneously in each. He commenced the exploration of the Gulf Stream, and at the same time projected a series of observations on the tides, on the magnetism of the earth, and the direction of the winds at different seasons of the year. He also instituted a succession of researches in regard to the bottom of the ocean within soundings, and the forms of animal life which are found there, thus offering new and unexpected indications to the navigator. He pressed into service, for the determination of the longitude, the electric telegraph; for the ready reproduction of charts, photography; and for multiplying copper-plate engravings, the new art of electrotyping. In planning and directing the execution of these varied improvements, which exacted so much comprehensiveness in design and minuteness in detail, Professor Bache was entirely successful. He was equally fortunate, principally through the moral influence of his character, in impressing upon the Government, and especially upon Congress, a more just estimate of what such a survey required for its maintenance and

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creditable prosecution. Not only was a largely-increased appropriation needed to carry out this more comprehensive plan, but also to meet the expenses consequent upon the extension of the shore-line itself. Our sea-coast, when the survey commenced, already exceeded in length that of any other civilized nation, but, in 1845, it was still more extended by the annexation of Texas, and again, in 1848, by our acquisitions on the Pacific. Professor Bache was in the habit of answering the question often propounded to him by members of Congress, "When will this survey be completed?" by asking, "When will you cease annexing new territory?" a reply not less significant at the present day than when it was first given, and which may continue long to be applicable under the expansive tendencies of our national policy.

When Professor Bache took charge of the survey, it was still almost in its incipient stage, subjected to misapprehension, assailed by unjust prejudice, and liable, during any session of Congress, to be suspended or abolished. When he died, it had conquered prejudice, silenced opposition, and become established on a firm foundation as one of the permanent bureaus of the executive Government. The importance of the work, which was always highly appreciated by the mariner, became strikingly obvious to the general public through the service which it rendered during the late war, in furnishing accurate charts and sailing directions for the guidance of our squadrons along the southern coast. Nor was this alone; an active participation was also borne by the officers of the survey in the attack of the United States Navy on Sumter, Port Royal, Fort Fisher, Mobile, New Orleans, and other strongholds, while constant aid was rendered by them in the navigation of the inlets and channels, and in the avoidance of hidden rocks or shoals with which none could be more minutely acquainted. Though the value of the survey was signally conspicuous on these occasions, it needs but little reflection to be convinced of its essential connection with the general prosperity of the country. Whatever diminishes the danger of departure from or an approach to our shores facilitates commerce, and thus renders more valuable the products of our industry, even in portions of our land most remote from the sea-board. But the survey should not be viewed alone in its economical relations, since, as an enlightened and liberal people, we owe it to the great community of nations and the cause of humanity to supply the world with accurate charts of our precarious coast, as well as to furnish it with all the other aids to safer navigation which the science and experience of the age may devise.

Professor Bache, with his enlightened appreciation of the value of abstract science, kept constantly in view the various problems relative to the physics of the globe, which are directly or even incidentally connected with the survey of the coast, and ever cherished the hope of being permitted to complete his labors by their solution. Among these was a new determination of the magnitude and form of the earth, and the variations in the intensity of terrestrial gravity at various points on

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the continent of North America; the discussion of the general theory of the tides; the magnetic condition of the continent; and the improvement of the general map of the United States, by determining its relation to the coast line, and the precise geographical positions of the most important points in the interior. Though his hopes in regard to these problems were not destined to be realized by himself, fortunately for the cause of science they have been left in charge of a successor in the person of his ardent friend and collaborator. Professor Peirce, to whose genius and industry we may confidently look for that full exposition of the work which, while it entitles him to the highest approbation of the scientific world, will render ample justice to the labors and sagacity of his lamented predecessor.

Besides having charge of the Coast Survey, Professor Bache was Superintendent of Weights and Measures, and in the exercise of this function directed a series of investigations relative to the collection of excise duties on distilled spirits, and likewise superintended the construction of a large number of sets of standard weights and measures for distribution among the several States of the Union. He was also appointed one of a commission to examine into the condition of the light-house system of this country, and to report upon any improvements calculated to render it more efficient. In the investigations pertaining to this subject, involving, as they do, a knowledge of a wide range of applied science, he took a lively interest, and rendered important service in the organization of the admirable system which was adopted and still remains in operation. This commission of investigation was afterward merged in the present Light-House Board, of which he continued a member until the time of his death.

In 1846 he had been named in the act of incorporation as one of the Regents of the Smithsonian Institution, and by successive reëlection was continued by Congress in this office until his death, a period of nearly twenty years. To say that he assisted in shaping the policy of the establishment would not be enough. It was almost exclusively through his predominating influence that the policy which has given the institution its present celebrity was, after much opposition, finally adopted. The object of the donation, it will be remembered, had been expressed in terms so concise that its import could scarcely be at once appreciated by the general public, though to the cultivators of science, to which class Smithson himself belonged, the language employed failed not to convey clear and precise ideas. Out of this state of things it is not surprising that difference of opinion should arise respecting the proper means to be adopted to realize the intentions of the founder of the institution. Professor Bache with persistent firmness, tempered by his usual moderation, advocated the appropriation of the proceeds of the funds principally to the plan set forth in the first report of the Secretary, namely, of encouraging and supporting original research in the different branches of science. Unfortunately this policy could only be

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partially adopted, on account of the restrictions of the enactment of Congress, by which provision was to be made for certain specified objects. He strenuously opposed the contemplated expenditure of a most disproportionate sum in the erection and maintenance of a costly edifice; but failing to prevent this, he introduced the resolution adopted by the board as a compromise, whereby the mischief which he could not wholly avert might at least be lessened. This resolution provided that the time of the erection of the building should be extended over several years, while the fund appropriated for the purpose, being in the mean time invested in a safe and productive manner, would serve in some degree to counterbalance the effect of the great and unnecessary outlay which had been resolved on. It would be difficult for the secretary, however unwilling to intrude anything personal on this occasion, to forbear mentioning that it was entirely due to the persuasive influence of the professor that he was induced, almost against his own better judgment, to leave the quiet pursuit of science and the congenial employment of college instruction to assume the laborious and responsible duties of the office to which, through the partiality of friendship, he had been called. Nor would it be possible for him to abstain from acknowledging with heart-felt emotion that he was from first to last supported and sustained in his difficult position by the fraternal sympathy, the prudent counsel, and the unwavering friendship of the lamented deceased.

His demeanor in the board was quiet and unobtrusive, and his opinions sought no support in elaborated or premeditated argument; but when a topic likely to lead to difficulty in discussion was introduced, he seldom failed, with that admirable tact for which he was always noted, to dispose of it by some suggestion so judicious and appropriate as to secure ready acquiescence and harmonious action. The loss of such a man in the councils of the Institution, when we consider the characteristics which it has been our aim to portray, must, indeed, be regarded as little less than irreparable.

As a vice-president of the United States Sanitary Commission his influence was felt in selecting proper agents, and suggesting efficient means for collecting and distributing the liberal contributions offered for ameliorating the condition of our soldiers during the war. But the services which he rendered the Government during the recent struggle were not confined to this agency, or to the immediate operations of the Coast Survey. He was called into consultations to discuss plans of attack on the part of the Navy, and for its coöperation with the Army. He acted also as a member of a commission to which various projects, professing to improve the art of war, were referred, and in this capacity it is not too much to say that his judicious counsel contributed to save the Government millions of dollars by preventing the adoption of plausible though impracticable propositions from which nothing but failure and loss could have resulted.

One of the last acts of his life was an exemplification of the devoted

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affection which he had always borne to his native city, whither it was his cherished intention to return when he should be at last released from official duty. At the request of the governor of Pennsylvania, although overwhelmed with other public labors, he planned lines of defenses for Philadelphia, and to a certain extent personally superintended their construction. Unaccustomed for many years to direct exposure to the sun, this work proved too much for his physical strength and brought on the first indications of that malady which terminated his life. Though apparently of a vigorous constitution, and capable, under the excitement of official life, of bearing an unusual amount of bodily fatigue, yet he was subject at intervals to "sick headaches," a disease which seems to have been hereditary, and which perhaps conspired with other causes in terminating his useful and distinguished career. Previous to the war he had spent the warmer part of each summer in a tent, at some point of the primary triangulation of the survey, whence he directed the various parties in the field by correspondence; and as the point was usually at the top of a mountain, or at some elevated position, from which other stations of the survey could be seen, he did not want for invigorating air. With this, and the exercise of measuring angles he laid in a store of health sufficient to enable him to carry on without interruption the arduous duties of the remaining portion of the year. But after the commencement of the war his presence was continually required in Washington to give advice and information as to military and naval operations, and to attend the meetings of the scientific commission to which we have previously referred. He was, therefore, no longer able to avail himself of the recuperating influence of mountain air, and in view of this his valuable life may be said to have been one of the sacrifices offered for the preservation of the Union. The first indications of the insidious disease which gradually sapped the citadel of life were numbness in the fingers of his right hand, and, on one occasion, for a short time only, loss of memory. Though these symptoms gave him some uneasiness, they did not diminish his exertions in the line of his duty. Other symptoms, however, exhibited themselves, which, though awaking anxiety, did not much alarm his friends, until he was suddenly deprived, in a considerable degree, of the power of locomotion and of the expression of ideas; the result, it was supposed, of a softening of the brain. But though the power of expression was paralyzed, his memory appeared to retain all the impressions of the past, and he evidently took much pleasure in having recalled to him scenes and events of years gone by. For several months he was very anxious as to the business of the Coast Survey, and it was with difficulty he could be restrained from resuming in full the duties of his office; but as the malady increased his perception of external objects diminished. He took less and less interest in passing events, and finally seemed to withdraw his attention from the exterior world, with which he almost ceased thenceforth to hold any active communication. It was hoped that a voyage to Europe, through the excitements of shipboard

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and the revival of old associations, would be of service to him; but, notwithstanding an occasional manifestation of his wonted spirit of social and intellectual enjoyment at the encounter of a friend of former times or distinguished associate in the walks of science, he returned from a sojourn abroad of eighteen months without having experienced any permanent abatement in the progress of his malady. He lingered for a short time longer, and finally resigned his breath at Newport, Rhode Island, on the 17th of February, 1867, in the sixty-first year of his age.

It would be impossible to name an American distinguished on purely scientific grounds to whom the enlightened sentiment of his own countrymen and of foreign nations has awarded more emphatic marks of admiration and esteem. The degree of Doctor of Laws was conferred on him by the principal universities of this country, and few of our leading societies were willing to forego the honor of numbering him among their associates. He was elected in succession president of the American Philosophical Society, of the American Association for the Advancement of Science, and, of the National Academy of Sciences established by Congress. Nor were foreigners less forward in acknowledging his merit. He was a member of the Royal Society of London, of the Imperial Academy of Sciences at St. Petersburg, of the Institute of France, the Royal Society of Edinburgh, the Royal and Imperial Geographical Society of Vienna, the Royal Academy of Turin, the Mathematical Society of Hamburg, the Academy of Sciences in the Institute of Bologna, the Royal Astronomical Society of London, and of the Royal Irish Academy of Dublin. In addition to these testimonies of appreciation, several medals were awarded to him by foreign governments for his distinguished services in the Coast Survey and in the cause of science generally.

The life we have here sketched is eminently suggestive, both from a philosophical and a practical point of view. It presents an unbroken series of successful efforts, with no interruptions in its sustained and constantly ascending course; all parts follow each other in harmonious continuity; and not only is each stage of its progress in advance of the one which preceded it, but it furnishes the means of education for that which succeeded. It is not merely curiosity, laudable as that might be, but a sense of the importance of the inquiry, which prompts us to ask, What were the mental and moral characteristics of the mind which produced such results? And we say intentionally, the *mind which produced these results*, for although it be true that accident has in many cases a determining influence on the fortunes of an individual, it will be clear from what precedes, or we shall have greatly failed in the task which we proposed to ourselves, that the element of casualty had but little to do with the success which crowned the life to which the question at present relates.

From long acquaintance with him and critical study of the events of

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his life, and the distinctive manifestations of his moral and intellectual nature, we venture, though not without hesitation, to present the following analysis of the character of one who has performed so conspicuous a part, and in whose memory so many are deeply interested.

Alexander Dallas Bache possessed, or we may perhaps say originally inherited, a mind of strong general powers, with no faculty in excess or in deficiency, but, as a whole, capable of unusual expansion or development in any direction which early training or the education of life might determine. He also possessed strong passions, which, instead of exerting an unfavorable effect on his character by their indulgence, became, under the restraining influence to which they were in due season subjected, a reserved energy, as it were, ready to manifest itself spontaneously and at any time in the vindication of truth and justice. He was likewise endowed with a power of *will* which, controlling all his faculties and propensities, rendered them subservient to those fixed purposes which had once received the sanction of his deliberate judgment. Eminent also among his characteristics, and perhaps most conspicuous of all, was the social element of refined humanity, a regard for his fellowman, which craved as an essential want of his nature fraternal sympathy, not only with those within the wide circle of his daily associations, but with those from whom he could expect no reciprocation of the sentiment, the entire brotherhood of mankind. These characteristics, with a nice perception of right and a conscience always ready to enforce its mandates, are, we think, sufficient to explain the remarkable career we have described.

They were perhaps indicated by himself, though with an admission not to be accepted without some reserve, in a conversation with the writer of this sketch in reference to his entrance at West Point. "I knew," he said, "that I had nothing like genius, but I thought I was capable by hard study of accomplishing something, and I resolved to do my best, and if possible to gain the approbation of the teachers, and, above all, to make myself loved and respected by my classmates."

To illustrate the progressive development of the individual traits of his character, we may be allowed to dwell for a moment on a few analytical details. The early period of his life, including that which preceded his first call to Philadelphia, was almost wholly devoted to the improvement of the mechanical, or the "doing" faculties of his mind, and but little attention was given to invention, or the exercise of original thought. His final examination at the Academy, perfect as it was in its kind, only exhibited his capacity for the acquisition of knowledge not the power to originate or apply it. When his efforts were first turned in the latter direction, he evinced, as I well remember, no especial aptitude for it that would indicate future success; but in a short time, and under the stimulus of the associations into which he was thrown in Philadelphia, the faculties of investigation and of generalization were rapidly developed, and had he not been partially turned aside

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from such pursuits, I doubt not but that he would have still more highly distinguished himself in the line of experimental research. Again, the change in the circumstances and relations of his life produced by his election to the presidency of Girard College introduced him to a familiarity with an entirely new class of ideas, which served to exercise and expand another faculty of his mind, that, namely, which observes and appreciates moral truths, though without impairing his aptitude for physical research. In like manner, his foreign mission with reference to popular education, by bringing him into intimate and friendly association with minds of the first order in the principal cities of Europe, afforded him an opportunity for enlarging the sphere of his sympathies, as well as of studying men under a great variety of social and mental peculiarities.

Again, his long residence and high social position at the seat of Government, his intimate acquaintance and friendly intercourse with statesmen and politicians, imbued him with a thorough knowledge of the working of the Government, such as few have ever possessed, while his exertions to sustain the Coast Survey and improve its condition served to call into active operation his power to appreciate character, to discern motives, and, therefore, to convince, persuade, and control men. His ability in this latter respect was remarkable; a personal interview with an opponent of the survey scarcely ever failed to convert perhaps an active enemy into an influential friend. His success in this respect often astonished those who frequently harassed Congress with propositions covertly designed to promote their own interest at the expense of public utility; hence the exclamation was not unfrequently heard, "Bache is certainly a wonderful manager." If that which is unusual constitutes, an element of wonder, then the exclamation was not without truth, though not in the sense of those by whom it was uttered, for he never advocated any measure that was not just, expedient, and proper, either as concerned the interests of the country or the welfare of his species.

On the whole, if we would seek the real secret of his influence over his fellow-men, it would be found, no doubt, to have consisted in the singular abnegation of self which pervaded his whole conduct; his great practical wisdom, his honesty of purpose, and his genial though quiet and unobtrusive manner. In the exercise of these characteristics, he was so far from the least appearance of dissimulation, that no one ever approached him without feeling that it was equally impossible to doubt the purity of his intentions as it was to elude the penetration of his quiet but thorough scrutiny. His calmness served as a shield from within and without; and as a guard against himself as well as a protection against others. It enabled him to weigh the motives and observe the character of those who consulted him with the view of securing his influence or gaining his patronage. His genial nature enabled him to descend gracefully from the heights of science and to enter fully and frankly into the feelings of any company with which he might be

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thrown. In this he was aided by a playfulness of fancy and a quiet humor which banished any reserve that might have been produced by a knowledge of his superior talents and attainments. He was, though by no means gifted with those attractions of person which influence at first sight, a favorite with all ages, and particularly with the sex whose discrimination of character is said to be least fallible. It seems almost superfluous to say of such a man that his friendship was open and unwavering, that his confidence once bestowed could be shaken by no mere difference of opinion or conflict of personal interests. Severe to himself under the responsibility of duty, and in the punctual observance of his engagements, his indulgence was reserved for the weak and the erring. Though his outer life was free from disappointments or reverses, and though he walked as it were in perpetual sunshine, all was not so within. Besides the anxiety and solicitude incident to the responsible duties of his position, occasions of trial and profound sorrow were not spared him. He was called to mourn the untimely loss of a beloved brother, who fell a victim to his zeal for the professor's service in the survey of the Gulf Stream; of another brother, the youngest and last, also an officer of the Navy, and a general favorite, who was drowned on the coast of California; and lastly of a sister, whom he had adopted and cherished as a child. In these seasons of affliction he found consolation in the steadfast convictions of religious faith. Nurtured in the forms and principles of the Episcopal church, he was a devout worshiper in the sanctuary, though not bigoted in his attachment to the peculiar ordinances of that communion. He fully recognized the union of science and religion, and held with unwavering constancy the belief that revelation, properly interpreted, and science, rightly understood, must ultimately join in perfect accord in reference to the great truths essential to the well-being of man.

As an evidence of his high appreciation of abstract science derived from original investigation, he left his property in trust to the National Academy of Sciences, the income to be devoted to the prosecution of researches in physical and natural science by assisting experimentalists and observers, and the publication of the results of their investigations.

I here close this imperfect sketch, in which I am conscious of having passed in silence many admirable traits of character and conduct, and of having very inadequately portrayed others, with the remark that, though our companion and brother has departed, his works and his influence still remain to us; that, sorrow as we must for his loss, we can still recall with pride and satisfaction the example he has left us of all that, in heart, in spirit, and in life, the true man of science ought to be.

The following is a list of the published scientific papers of Alexander Dallas Bache, copied from the appendix to an address by Dr. Benjamin

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A. Gould, before the American Association for the Advancement of Science, August 6, 1868.

1829—Feb. On the specific heat of the atoms of bodies. *Journ. Phila. Acad. Nat. Sci.*, vi, 141.

1830—May. On the inflammation of phosphorus in a partial vacuum. *Amer. Journ. Sci.*, xviii, 372.

1831—Mar. Report of the committee of the Franklin Institute, of Pennsylvania, appointed May, 1829, to ascertain by experiment the value of water as a moving power. *Journ. Frank. Inst.*, vii, 145; viii, ix, x, &c.

1831—April. Safety apparatus for steamboats, being a combination of the fusible metal disk with the common safety-valve. *Journ. Franklin Inst.*, vii, 217; *Amer. Journ. Sci.*, xx, 317.

1831—Oct. Meteorological observations during the solar eclipse of February 12, 1831. *Trans. Amer. Phil. Soc.*, iv, 132.

1832—July. Translation of Berzelius's Essay on Chemical Nomenclature. *Amer. Journ. Sci.*, xxii, 248; *Philadelphia*, 1832.

1832—July. Notice of experiments on electricity developed by magnetism. *Journ. Franklin Inst.*, x, 66; *Amer. Journ. Sci.*, xxii, 409.

1832—Oct. Alarm to be applied to the interior flues of steam-boilers. *Journ. Franklin Inst.*, x, 217.

1832—Nov. On the diurnal variation of the magnetic needle. *Trans. Amer. Phil. Soc.*, v, 1.

1833—Mar. Elementary view of the application of analysis to reflection and refraction. An appendix to Sir David Brewster's treatise on optics. *Philadelphia*, 1833. pp. 95.

1833—July. Translation of Avogadro's memoir on the elastic force of the vapor of mercury. *Amer. Journ. Sci.*, xxiv, 286.

1833—July. Note of the effect upon the magnetic needle of the aurora borealis, visible at Philadelphia on the 17th of May, 1833. *Journ. Franklin Inst.*, xii, 5; *Amer. Journ. Sci.*, xxvii, 113.

1833—Nov. Attempt to fix the date of Dr. Franklin's observation, in relation to the northeast storms of the Atlantic States. *Journ. Franklin Inst.*, xii, 300.

1833—Dec. Report of experiments on the navigation of the Chesapeake and Delaware Canal by steam. *Journ. Franklin Inst.*, xii, 361.

1834—Jan. Observations on the disturbance in the direction of the horizontal needle, during the occurrence of the aurora of July 10, 1833. *Journ. Franklin Inst.*, xiii, 1; *Amer. Journ. Sci.*, xxvii, 118.

1834—Jan. Report of the managers of the Franklin Institute, in relation to weights and measures. Presented in compliance with a resolution of the house of representatives of the State of Pennsylvania. *Journ. Franklin Inst.*, xiv, 6; *Philadelphia*, 1834.

1834—June. Analysis of some of the coals of Pennsylvania, (made jointly with Professor H. D. Rogers.) *Journ. Phila. Acad. Nat. Sci.*, vii, 158.

1834—Oct. On the variation of the magnetic needle. *Amer. Journ. Sci.*, xxvii, 385.

1834—Nov. Observations to determine the magnetic dip at Baltimore, Philadelphia, New York, West Point, Providence, Springfield, and Albany, (made jointly with Professor E. H. Courtenay.) *Trans. Amer. Phil. Soc.*, v, 209.

1834—Nov. Meteoric observations on and about Nov. 13, 1834. *Amer. Journ. Sci.*, xxvii, 335; *Journ. Franklin Inst.*, xvi, 369.

1835—Jan. Note relating to the hardening of lime under water, by the action of carbonate of potassa, &c., and to the hardening of carbonate of lime in the air, by potassa and soda. *Journ. Frank. Inst.*, xv, 6.

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1835—Mar. Meteorological observations made during the solar eclipse of November 30, 1834. *Trans. Amer. Phil. Soc.*, v, 237.

1835—May. Experimental illustrations of the radiating and absorbing powers of surfaces for heat, of the effects of transparent screens, of the conducting power of solids, &c. *Journ. Franklin Inst.*, xv, 303; *Amer. Journ. Sci.*, xxviii, 320.

1835—May. Replies to a circular in relation to the occurrence of an unusual meteoric display on the 13th of November, addressed by the Secretary of War to the military posts of the United States, with other facts relating to the same question. *Amer. Journ. Sci.*, xxviii, 305; *Journ. Franklin Inst.*, xvi, 149.

1835—June. Experiments on the efficacy of Perkins's steam-boilers or circulators. *Journ. Franklin Inst.*, xv, 379.

1835—July. On the comparative corrosion of iron, copper, zinc, &c., by a saturated solution of common salt. *Journ. Franklin Inst.*, xvi, 2.

1835—Nov. Inquiry in relation to the alleged influence of color on the radiation of non-luminous heat. *Journ. Franklin Inst.*, xvi, 289; *Amer. Journ. Sci.*, xxx, 16.

1835—Dec. Historical notice of a hypothesis to explain the greater quantity of rain which falls on the surface of the ground than above it. *Journ. Franklin Inst.*, xvii, 106.

1836—Jan. Observations upon the facts recently presented by Professor Olmsted in relation to meteors seen on the 13th of November, 1834. *Journ. Franklin Inst.*, xvii, 33; *Amer. Journ. Sci.*, xxix, 383.

1836—Jan. Historical note on the discovery of the non-conducting power of ice. *Journ. Franklin Inst.*, xvii, 182.

1836—Jan. Report of experiments made by the committee of the Franklin Institute of Pennsylvania, on the explosions of steam-boilers, at the request of the Treasury Department of the United States. *Journ. Franklin Inst.*, xvii, 1, 73, 145, 217, 289.

1836—Feb. Remarks on a method, proposed by Dr. Thomson, for determining the proportions of potassa and soda in a mixture of the two alkalies; with the application of a similar investigation to a different method of analysis. *Journ. Franklin Inst.*, xvii, 305.

1836—April. Notes and diagrams illustrative of the directions of the forces acting at and near the surface of the earth, in different parts of the Brunswick tornado of June 19, 1835. *Trans. Amer. Phil. Soc.*, v. 407.

1836—May. Or the relative horizontal intensities of terrestrial magnetism at several places in the United States, with the investigations of corrections for temperature, and comparisons of the methods of oscillation in full and in rarefied air, (jointly with Professor E. H. Courtenay.) *Trans. Amer. Phil. Soc.*, v, 427.

1836—July. Proposed forms of diagrams for exhibiting to the eye the results of a register of the direction of the wind. *Journ. Franklin Inst.*, xviii, 22.

1837—May. Corresponding magnetic observations, in connection with Professor Lloyd of Dublin, to determine the relative magnetic intensity in Philadelphia, Dublin, and Edinburgh. *Proc. R. Irish Acad.*, i, 71.

1838—Aug. Note on the effect of deflected currents of air on the quantity of rain collected by a rain-gauge. *Rep. Brit. Assoc. Adv. Sci.*, 1838, ii, 25.

1839—May. Report on education in Europe, to the trustees of the Girard College for Orphans. 8vo. pp. 666. *Philadelphia*, 1839.

1839—Nov. Comparison of Professor Loomis's observations on magnetic dip with those obtained by Professor Courtenay and himself. *Proc. Amer. Phil. Soc.*, i, 146.

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1839—Nov. Simultaneous magnetic observations, made in correspondence with Professor Lloyd of Dublin. *Proc. R. Irish Acad.*, i, 462; *Amer. Journ. Sci.*, xli, 212.

1840—Mar. Observations of the magnetic intensity at twenty-one stations in Europe. *Trans. Amer. Phil. Soc.*, vii, 75; *Proc. Amer. Phil. Soc.*, i, 185.

1840—Nov. Determination of the magnetic dip at Philadelphia and Baltimore. *Proc. Amer. Phil. Soc.*, i, 294.

1840—Dec. On an instrument for measuring the changes in the vertical component of the force of terrestrial magnetism *Proc. Amer. Phil. Soc.*, i, 311.

1841—May. Diagram of the direction and force of the wind, and amount and rate of rain-fall during the severe gust of April 2, 1841. *Proc. Amer. Phil. Soc.*, ii, 56.

1841—July. On observations of the magnetic dip, made at Baltimore by Mr. Nicollet and Major Graham. *Proc. Amer. Phil. Soc.*, ii, 83.

1841—Nov. Account of the formation of cumulus cloud from the action of a fire. *Proc. Amer. Phil. Soc.*, ii, 116.

1842—Mar. Semi-annual report of the principal of the High School, and report to the controllers of the public schools. *Twenty-fourth Annual Report of Controllers of Public Schools of Philadelphia*, pp. 23, 50.

1842—April. On the application of the self-registering rain-gauge to registering the fall of snow. *Proc. Amer. Phil. Soc.*, ii, 164.

1842—July. Report of the principal of the Central High School for the year ending July, 1842. 8vo. pp. 120. *Philadelphia.*

1842—Oct. Address delivered at the close of the twelfth exhibition of American manufactures, held by the Franklin Institute.

1842—Dec. On a modification of Lloyd's induction inclinometer. *Proc. Amer. Phil. Soc.*, ii, 237.

1843—Jan. On a new dew-point hygrometer. *Proc. Amer. Phil. Soc.*, ii, 249.

1843—May. Results of two years' observations of the magnetic elements, and of the temperature, pressure, and moisture of the atmosphere at the magnetic observatory of Girard College. *Proc. Amer. Phil. Soc.*, iii, 90.

1843—May. Account of an instrument for determining the conducting power of bodies for heat. *Proc. Amer. Phil. Soc.*, iii, 132.

1843—May. Account of observations at Philadelphia and Toronto, during the magnetic disturbance of May 6, 1843, and their bearing upon the question of the kind of instruments and observations appropriate to determine such phenomena. *Proc. Amer. Phil. Soc.*, iii, 175.

1845—Feb. Report to the Treasury Department on the progress of construction of standard weights and measures. *Senate Doc.* 149, *28th Congress, 2d Session.*

1847—Dec. Description of a new base apparatus used in the United States Coast Survey. *Proc. Amer. Phil. Soc.*, iv, 368.

1848—Dec. On a new method of observing transits. *Monthly Not. R. Astr. Soc.*, ix, 123; *Bull. Acad. Sci., Brussels*, xvi, 313; *Astr. Nachr.*, xxviii, 273.

1849—Aug. Comparison of the results obtained in geodesy by the application of the theory of least squares. *Proc. Amer. Assoc. Adv. Sci., Cambridge*, 1849, p. 102.

1849—Aug. On the progress of the survey of the coast of the United States. *Proc. Amer. Assoc., Cambridge*, 1849, p. 162.

1850—Mar. Notes on the results of observations of the direction and force of the wind at the Coast Survey stations at Mobile Point and at Cat Island, Gulf of Mexico. *Proc. Amer. Assoc., Charleston*, 1850, p. 50.

1850—Mar. Abstract of a communication on the recent progress of the telegraphic operations of the United States Coast Survey. *Proc. Amer. Assoc., Charleston*, 1850, p. 122.

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50—Aug. Method used in the Coast Survey for showing the results of current observations. *Proc. Amer. Assoc., New Haven*, 1850, p. 70; *C. S. Rep.*, 1850, p. 136.

50—Aug. Remarks upon the meeting of the American Association at Charleston, in March, 1850. *Proc. Amer. Assoc., New Haven*, 1850, p. 159.

50—Aug. Notes of a discussion of tidal observations, in connection with the Coast Survey, made at Cat Island, in the Gulf of Mexico. *Proc. Amer. Assoc. New Haven*, 1850, p. 281; *Amer. Journ. Sci.*, xii, 341; *C. S. Rep.*, 1851 p. 127.

51—May. Current chart of New York Bay, from observations in the Coast Survey. *Proc. Amer. Assoc., Cincinnati*, 1851, p. 43.

51—May. Comparison of curves showing the hourly changes of magnetic declination at Philadelphia, Toronto, and Hobarton from April to August, and from October to February, and for March and September. *Proc. Amer. Assoc., Cincinnati*, 1851, p. 62.

51—May. On the determination of the velocity of sound by the method of coincidences. *Proc. Amer. Assoc., Cincinnati*, 1851, p. 75.

51—May. Notes on the use of the zenith telescope in determining latitudes in the Coast Survey by Talcott's method, and on the reduction of the observations. *Proc. Amer. Assoc., Cincinnati*, 1851, p. 151; *Amer. Journ. Sci.*, xiv, 191.

51—Aug. Additional notes of a discussion of tidal observations made in connection with the Coast Survey at Cat Island, Louisiana. *Proc. Amer. Assoc., Albany*, 1851, p. 94; *Amer. Journ. Sci.*, xiv, 346; *C. S. Rep.*, 1852, p. 111.

51—Aug. Notes on the tides at Sand Key, near Key West, Florida. *Proc. Amer. Assoc., Albany*, 1851, p. 138.

51—Aug. Address on retiring from the duties of president of the American Association for the Advancement of Science. *Proc. Amer. Assoc., Albany*, 1851, p. 41.

52—Mar. Report on the harbor of Charleston, South Carolina, (as chairman of a committee.)

53—July. On the tides at Key West, Florida, from observations made in connection with the United States Coast Survey. *Proc. Amer. Assoc., Cleveland*, 1853, p. 32; *Amer. Journ. Sci.*, xviii, 305; *C. S. Rep.*, 1853, p. 71.

53—July. On the tides of the western coast of the United States, from observations at San Francisco, California, in connection with the United States Coast Survey. *Proc. Amer. Assoc., Cleveland*, 1853, p. 42; *Amer. Journ. Sci.*, xxi, 1; *C. S. Rep.*, 1853, p. 77.

54—May. Preliminary determination of co-tidal lines on the Atlantic coast of the United States, from the Coast Survey tidal observations. *Proc. Amer. Assoc., Washington*, 1854, p. 107; *Amer. Journ. Sci.*, xxi, 14; *C. S. Rep.*, 1854, p. 147.

54—May. Comparison of the diurnal inequality of the tides at San Diego, San Francisco, and Astoria, on the Pacific coast of the United States, from observations in connection with the Coast Survey. *Proc. Amer. Assoc., Washington*, 1854, p. 161; *Amer. Journ. Sci.*, xxi, 10; *C. S. Rep.*, 1854, p. 152.

54—May. On the distribution of temperature in and near the Gulf Stream, off the coast of the United States, from observations made in the Coast Survey. *Proc. Amer. Assoc., Washington*, 1854, p. 134; *Amer. Journ. Sci.*, xxi, 29; *C. S. Rep.*, 1854, p. 156.

54—June. Second report on the harbor of Charleston, South Carolina.

55—Feb. Discussion of observations for the isodynamic, isogonic, and isoclinal curves of terrestrial magnetism, on and near the line of the boundary survey between the United States and Mexico, made in 1849–1852.

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under the order of W. H. Emory, and combined with observations at San Francisco, California, and Dollar Point, (E. Base,) and Jupiter, Texas. *Mem. Amer. Acad. Arts and Sci.*, v, 372.

1855—Aug. Approximate co-tidal lines of the Pacific coast of the United States, from observations in the United States Coast Survey. *Proc. Amer. Assoc., Providence*, 1855, p. 144; *C. S. Rep.*, 1855, p. 338.

1855—Aug. Notice of the tidal observations made on the coast of the United States, on the Gulf of Mexico, with type-curves at the several stations, and their decomposition into the curves of diurnal and semi-diurnal tides. *Proc. Amer. Assoc., Providence*, 1855, p. 152; *Amer. Journ. Sci.*, xxi, 128; *C. S. Rep.*, 1855, p. 346.

1855—Aug. Notice of earthquake waves on the western coast of the United States on the 23d and 25th of December, 1854. *Proc. Amer. Assoc., Providence*, 1855, p. 153; *Amer. Journ. Sci.*, xxi, 37; *C. S. Rep.*, 1855, p. 342.

1855—Dec. Report to New York harbor commissioners, on surveys of New York Harbor.

1856—Jan. Annual address before the American Geographical Society, being a paper upon the Gulf Stream. *Bulletin Amer. Geogr. Soc.*, ii, 94.

1856—Aug. Approximate co-tidal lines of diurnal and semi-diurnal tides of the coast of the United States on the Gulf of Mexico. *Proc. Amer. Assoc., Albany*, 1856, p. 168; *Amer. Journ. Sci.*, xxiii, 12; *C. S. Rep.*, 1856, p. 252.

1856—Aug. On the general distribution of terrestrial magnetism in the United States, from observations made in the United States Coast Survey and others, (in connection with Mr. J. E. Hilgard.) *Proc. Amer. Assoc., Albany*, 1856, p. 187; *Amer. Journ. Sci.*, xxvi, 1; *C. S. Rep.*, 1856, p. 209.

1856—Aug. Observations to determine the cause of the increase of Sandy Hook, made by the Coast Survey for the commissioners on harbor encroachments. *Proc. Amer. Assoc., Albany*, 1856, p. 171; *Amer. Journ. Sci.*, xxiii, 16; *C. S. Rep.*, 1856, p. 263.

1856—Aug. Notice of observations to determine the progress of the tidal wave of the Hudson River, made by the Coast Survey for the commissioners on harbor encroachments. *Proc. Amer. Assoc., Albany*, 173; *Amer. Journ. Sci.*, xxiii, 17.

1856—Aug. Notes on the progress made in the Coast Survey in prediction-tables for the tides of the United States coast. *Proc. Amer. Assoc., Albany*, 1856, p. 166; *C. S. Rep.*, 1856, p. 249.

1856—Oct. Anniversary address before the American Institute of the city of New York, during the twenty-eighth annual fair. *New York*, 1857, pp. 60.

1856—Dec. Report to New York harbor commissioners on the progress of the survey of New York harbor.

1856—Dec. Notes on the winds of the coast of the United States on the Gulf of Mexico. *C. S. Rep.*, p. 272.

1856—Dec. Report of Superintendent of Weights and Measures.

1857—Aug. Notice of the determination of the longitude of Fernandina, Amelia Island, Florida, by means of chronometer exchanges from Savannah, Georgia, (in connection with Mr. C. A. Schott.) *Proc. Amer. Assoc., Montreal*, 1857, p. 166; *C. S. Rep.* 1857, p. 314.

1857—Aug. On the heights of the tides of the Atlantic coast of the United States, from observations in the Coast Survey. *Proc. Amer. Assoc., Montreal*, 1857, p. 175; *Amer. Journ. Sci.*, xxv, 47; *C. S. Rep.*, p. 342.

1857—Aug. On the winds of the western coast of the United States, from observations in connection with the United States Coast Survey. *Proc. Amer. Assoc., Montreal*, 1857, p. 183; *Amer. Journ. Sci.*, xxv, 52; *C. S. Rep.* 1857, p. 354.

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1857—Aug. Notes on the measurement of the base of the primary triangulation of the eastern section of the coast of the United States, on Epping Plains, Maine. *Proc. Amer. Assoc., Montreal*, 1857, p. 160; *Amer. Journ. Sci.*, xxv, p. 58; *C. S. Rep.*, 1857, p. 302.

1857—Dec. Report relative to the New York harbor survey. *U. S. Senate Doc.*, 1858, No. 16.

1858—May. On a supposed personal equation in the use of the zenith telescope, for determining latitudes by Talcott's method. *Proc. Amer. Assoc., Baltimore*, 1858, p. 14; *C. S. Rep.*, 1858, p. 184.

1858—May. On the tidal currents of New York Bay, near Sandy Hook. *Proc. Amer. Assoc., Baltimore*, 1858, p. 80; *Amer. Journ. Sci.*, xxvi, 334; *C. S. Rep.*, 1858, p. 197.

1858—July. Defense of Dr. Gould, by the scientific council of the Dudley Observatory, (in connection with Professors Joseph Henry and Benj. Peirce.) *Albany*, 1858, pp. 91.

1859—Feb. Address before the Alumni Association of the Central High School. *Philadelphia*, 1859.

1859—June. Address in tribute to the memory of Humboldt. *The Pulpit and Rostrum*, No. 6.

1859—Aug. General account of the results of the discussion of the declinometer observations, made at Girard College, Philadelphia, between the years 1840 to 1845, with special reference to the eleven-year period. *Proc. Amer. Assoc., Springfield*, 1859, p. 248.

1859—Aug. Gulf-Stream explorations. Third memoir. Distribution of temperature in the water of the Florida Channel and Straits. *Proc. Amer. Assoc., Springfield*, 1859, p. 257; *Amer. Journ. Sci.*, xxix, 199; *C. S. Rep.*, 1859, p. 306.

1859—Nov. Discussion of the magnetic and meteorological observations made at the Girard College observatory, Philadelphia, in 1840 to 1845, Part I. Investigation of the eleven-year period in amplitude of the solar diurnal variation, and of the disturbances of the magnetic declination. pp. 22. *Smiths. Contrib. to Knowledge*, vol. xi, art. iv; *C. S. Rep.*, 1859, p. 278.

1860—Aug. Lecture on the Gulf Stream. *Proc. Amer. Assoc., Newport*, 1860, p. xlix; *Amer. Journ. Sci.*, xxx, 313; *C. S. Rep.*, 1860, p. 165.

1860—Aug. General account of the results of Part II of the discussion of the declinometer observations made at the Girard College, Philadelphia, between 1840 and 1845, with special reference to the solar diurnal variation and its annual inequality. *Proc. Amer. Assoc., Newport*, 1860, p. 74; *Amer. Journ. Sci.*, xxxi, 197.

1860—Aug. Abstract of a discussion of the influence of the moon on the declination of the magnetic needle, from the observations at the Girard College. *Proc. Amer. Assoc., Newport*, 1860, p. 83; *Amer. Journ. Sci.*, xxxi, 98.

1860—Sept. Observations of the solar eclipse of 1860, July 18, at the Coast Survey station, Gunstock Mountain. *Astron. Journ.*, vi, 157.

1862—June. Discussion of the magnetic and meteorological observations made at the Girard College observatory, Philadelphia, in 1840 to 1845, Part II. Investigation of the solar diurnal variation of the magnetic declination and its annual inequality, pp. 28. *Smiths. Contrib. to Knowl.*, vol. xiii, art. v; *C. S. Rep.*, 1860, p. 293.

1862—June. Discussion of the magnetic and meteorological observations made at the Girard College observatory, Philadelphia, in 1840 to 1845, Part III. Investigation of the influence of the moon on the magnetic declination, pp. 16. *Smiths. Contrib. to Knowl.*, vol. xiii, art. vi; *C. S. Rep.*, 1860, p. 312.

1862—Sept. Abstract of a discussion of the horizontal component of the magnetic

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force, from observations made at the Girard College observatory, Philadelphia, in the years 1840 to 1845. *Amer. Journ. Sci.*, xxxiv, 261.

1862—Nov. Discussion of the magnetic and meteorological observations made at the Girard College observatory, Philadelphia, in 1840 to 1845, second section, comprising Parts IV, V, VI. Horizontal force, investigation of the ten or eleven year period, and of the disturbances of the horizontal component of the magnetic force; investigations of the solar diurnal variation and of the annual inequality of the horizontal force, and the lunar effect on the same, pp. 78. *Smiths. Contrib. to Knowl.*, vol. xiii, art. viii; *C. S. Rep.*, 1862, p. 161.

1862—Nov. Abstract of an investigation of the solar diurnal variation of the annual inequality of the horizontal component of the magnetic force, from observations made at the Girard College observatory, between 1840 and 1845. *Amer. Journ. Sci.*, xxxiv, 373.

1862—Nov. Abstract of a discussion of the influence of the moon on the horizontal magnetic force, from observations made at the Girard College observatory, in the years 1840 to 1845. *Amer. Journ. Sci.*, xxxiv, 381.

1862—Dec. Additional researches on the co-tidal lines of the Gulf of Mexico. *C. S. Rep.*, 1862, p. 126.

1863—Jan. Eulogy on Hon. James Alfred Pearce. *Annual Report of Regents Smithsonian Institution for* 1862, p. 100.

1863—May. Abstract of results of a magnetic survey of Pennsylvania and parts of adjacent States in 1840 and 1841, with some additional results of 1843 and 1862, and a map. *Amer. Journ. Sci.*, xxxv, 359; *C. S. Rep.*, 1862, p. 212.

1863—Oct. Records and results of a magnetic survey of Pennsylvania and parts of adjacent States in 1840 and 1841, with some additional records and results of 1834, 1835, 1843, and 1862, and a map, pp. 88. *Smiths. Contrib. to Knowl.*, vol. xiii, art. viii.

1864—May. Discussion of the magnetic and meteorological observations made at the Girard College observatory, Philadelphia, in 1840 to 1845, third section, comprising Parts VII, VIII, IX. Vertical force. Investigation of the eleven (or ten) year period, and of the disturbances of the vertical component of the magnetic force, and appendix on the magnetic effect of the aurora borealis; with an investigation of the solar diurnal variation, and of the annual inequality of the vertical force, and of the lunar effect on the vertical force, the inclination and total force, pp. 72. *Smiths. Contrib. to Knowl.*, vol. xiv, art. ii; *C. S. Rep.*, 1863, p. 156.

1865—Jan. Discussion of the magnetic and meteorological observations made at the Girard College observatory, Philadelphia, in 1840 to 1845; fourth section, comprising Parts X, XI, XII. Dip and total force. Analysis of the disturbances of the dip and total force; discussion of the solar diurnal variation and annual inequality of the dip and total force; and discussion of the absolute dip, with the final values for declination, dip, and force, between 1841 and 1845, pp. 44. *Smiths. Contrib. to Knowl.*, vol. xiv, art. iii; *C. S. Rep.*, 1864, p. 183.

1844 to 1863. Annual reports of the progress of the United States Coast Survey.

1844 to 1848. Annual reports of Superintendent of Weights and Measures.

1855 to 1863. Tide tables for the use of navigators, prepared from the Coast Survey observations, annually.

Also, the following reports concerning harbors, jointly with Messrs. Totten and Davis:

1853—Mar. Report upon Cape Fear River and harbor.

1854—Oct. Report of Portland harbor commission

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55—Mar. Second report of the commissioners on Portland harbor.

55—Dec. Report of advisory council of the New York harbor commission. *New York Assembly Doc.*, 1856, No. 8.

56—July. Report of the advisory council of the New York harbor commission, recommending certain lines in the East and North Rivers, and in Brooklyn. *New York Senate Doc.*, 1857, No. 40, p. 107.

56—July. Report of the advisory council of the New York harbor commission on Gowanus Bay and its improvements. *New York Senate Doc.*, 1857, No. 40, p. 118.

56—Sept. Report of the advisory council of the New York harbor commission on the Hell Gate Passage, regarded as a channel of approach to New York harbor. *New York Senate Doc.*, 1857, No. 40, p. 137.

56—Oct. Second general report of the advisory council to the harbor commissioners, on lines in New York harbor. *New York Senate Doc.*, 1857, No. 40, p. 81.

56—Dec. Report of the advisory council to the commissioners on harbor encroachments of New York, in regard to safe and commodious anchorages in New York harbor, for the purposes of the quarantine of vessels. *New York Senate Doc.*, 1857, No. 40, p. 132.

56—Dec. Report of the advisory council to the New York harbor commissioners upon Harlem River and Spuyten Duyvil Creek. *New York Senate Doc.*, 1857, No. 40, p. 151.

57—Feb. Report of the advisory council of lines for the East River, for the shore of Long Island, and the east shore of Staten Island. *New York Senate Doc.*, 1857, No. 126, p. 9.

57—Mar. Report of the advisory council to the New York harbor commissioners upon the comparative map of New York Bay and harbor, and its approaches, prepared by the Coast Survey in March, 1857. *New York Senate Doc.*, 1857, No. 126, p. 12.

60—Mar. Preliminary reports of commissioners on Boston harbor. *Boston City Doc.*, 1860, No. 37.

60—Dec. Second report of United States commissioners on the condition of Boston harbor. *Boston City Doc.*, 1860, No. 97.

60—Dec. Special report of the United States commissioners on Boston harbor, on the relation of Mystic Pond and River to Boston harbor. *Boston City Doc.*, 1861, No. 12.

60—Dec. Report of the advisory council of the joint committee of the Massachusetts legislature on the subject of a ship-canal to connect Barnstable Bay and Buzzard's Bay. *Mass. Pub. Doc.*, 1864, No. 41.

61—Sept. Fourth report of the United States commissioners on Boston harbor. *Boston City Doc.*, 1861, No. 62.

—Sept. Fifth report of the United States commissioners on Boston harbor. *Boston City Doc.*, 1861, No. 63.

—April. Sixth report of the United States commissioners on Boston harbor. *Boston City Doc.*, 1863, No. 53.

—Mar. Seventh report of the United States commissioners on Boston harbor. *Boston City Doc.*, 1864, No. 33.

— Mar. Eighth report of the United States commissioners on Boston harbor. *Boston City Doc.*, 1864, No. 34.

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JOURNAL OF PROCEEDINGS

OF

THE BOARD OF REGENTS

OF THE

SMITHSONIAN INSTITUTION.

WASHINGTON, D. C., *January* 25, 1872.

A meeting of the Board of Regents of the Smithsonian Institution was held this day in the Regents' room, at 7 o'clock p. m. Present: Hon. H. Hamlin, Hon. L. Trumbull, Hon. G. Davis, Hon. L. P. Poland, Hon. S. S. Cox, Hon. P. Parker, Hon. H. D. Cooke, and Professor Henry, the Secretary.

Mr. Hamlin was called to the chair.

The Secretary stated that an act of Congress had substituted the governor of the District of Columbia as an *ex-officio* Regent, in place of the mayor of Washington, the latter office having ceased to exist. Governor Cooke was then introduced as a member of the Board.

Dr. Parker, from the Executive Committee, presented a preliminary statement of accounts.

On motion of Mr. Trumbull, the report was accepted.

The Secretary made a statement relative to the Virginia stocks held by the Institution. It had been deemed advisable that the registered stock should be converted into coupon bonds, because the coupons were receivable for taxes, and the State had not paid interest on its stock for several years. The transfer had therefore been made for the Institution by Riggs & Co.

On motion of Judge Poland, the Secretary was directed to deposit the Virginia coupon bonds, now in Riggs' Bank, in the Treasury of the United States for safe-keeping.

The Secretary gave an account of the improvements made in the building during the past year.

A communication from Dr. C. H. F. Peters, of the observatory at Clinton, New York, was read, asking the Institution to defray the expense and act as the medium of communicating discoveries of planets, comets, etc., by ocean telegraph.

The Secretary stated that he had applied to the ocean telegraph company for the free transmission of astronomical discoveries, but had not received a reply.

Several of the Regents expressed the opinion that the Institution

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should have the franking privilege, to enable it to distribute scientific reports, &c., to libraries and other institutions of the country.

The Secretary stated that a stable had recently been erected on the grounds, with the approval of General Babcock, Commissioner of Public Buildings. This was necessary for the use of the Institution, though the horse and carriage used by the Secretary had been purchased by himself.

On motion of Mr. Trumbull, the action of the Secretary was approved.

A claim, presented by T. R. Peale, esq., of Washington, for a portrait of Washington, painted by his father, Charles Wilson Peale, now in the Smithsonian museum, was referred to the Executive Committee.

A communication was presented from Henry O'Rielly, relative to the discovery of the electro-magnetic telegraph, which, on motion of Mr. Davis, was read, and ordered to be placed in the archives of the Institution.

Adjourned to meet at the call of the Secretary.

MARCH 28, 1872.

A meeting of the Board was called for this evening at 7 o'clock. Present: Hon. S. P. Chase, Chancellor of the Institution; Hon. L. P. Poland, Hon. J. A. Garfield, Hon. P. Parker, and Prof. Henry, the Secretary.

On account of a night session of the Senate, the Vice-President, Hon. Mr. Colfax, and Senators Trumbull and Hamlin were prevented from attending the meeting.

No quorum being present, adjourned to meet at the call of the Secretary.

APRIL 3, 1872.

A meeting of the Board of Regents was held at 7 o'clock at the Institution. Present: Vice-President Colfax, Hon. H. Hamlin, Hon. L. Trumbull, Hon. L. P. Poland, Hon. P. Parker, Hon. H. D. Cooke, and Prof. Henry, Secretary.

Mr. Colfax was called to the chair.

The minutes of the previous meeting were read and approved.

Dr. Parker, in behalf of the Executive Committee, presented the report of the committee, which was read, and, on motion of Mr. Hamlin, accepted.

Dr. Parker stated that the Virginia coupon bonds which had been received from the State had no seal affixed to them. In regard to this, the Secretary presented the following communication from Jos. Mayo, jr., treasurer of Virginia:

COMMONWEALTH OF VIRGINIA, TREASURER'S OFFICE,
Richmond, March 30, 1872.

The following coupon bonds Nos. 11521 to 11578, both inclusive, for $1,000 each; No. 1380 for $500, and Nos. 4191 and 4192 for $100 each, of

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Virginia consolidated debt, exchanged December 9, 1871, for the Smithsonian Institution, and standing in its name on the books of this office, were regularly issued and are good and valid. The omission of the State seal upon them was an inadvertance, which will be corrected whenever the bonds are returned for the purpose. In fact the seal is not necessary to give validity to the bonds, though it is customary to place it upon them.

Very respectfully, yours,

JOS. MAYO,
Treasurer of Virginia.

On motion of Mr. Hamlin, it was

Resolved, That the Secretary return the bonds to Richmond for the purpose of having the State seal affixed to them.

The Secretary gave an account of Major Powell's expedition, which was authorized by Congress at its last session and had by law been placed under the direction of the Smithsonian Institution. He stated that he had addressed a communication to Congress recommending an additional appropriation for continuing the survey.

The Secretary stated that, for many years, harmonious relations had existed between the Institution and the Department of Agriculture for co-operation in advancing the science of meteorology. The blanks had been furnished and distributed by that Department, and the observers sent their returns to the Commissioner, saving a large item of expense in the way of postage. The monthly summaries of observations of rain, temperature, etc., had been published in the monthly reports of the Department, and had done much to encourage and stimulate the observers and to furnish valuable data for agricultural and scientific purposes. Judge Watts, the present Commissioner, had recently decided, however, to discontinue this publication, and this was an additional reason why the Institution should have the franking privilege. The Institution had a large number of computers at work in reducing and discussing all the meteorological observations it had collected during the last twenty years, and would soon publish the results.

The Secretary presented his annual report for the year 1871, which was read, and, on motion of Mr. Trumbull, accepted.

A communication from F. O. J. Smith, esq., of Portland, relative to the electro-magnetic telegraph, was presented to the Board, and ordered to be placed in the archives.

The board then adjourned *sine die*.

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JOURNAL OF PROCEEDINGS OF THE BOARD OF REGENTS OF THE SMITHSONIAN INSTITUTION.

THURSDAY, *January* 16, 1873.

A meeting of the Board of Regents of the Smithsonian Institution was held this day, at 6 o'clock p. m. Present: The Chancellor Chief Justice Chase, Hon. S. Colfax, Hon. H. Hamlin, Hon. L. Trumbull, Hon. J. W. Stevenson, Hon. J. A. Garfield, Hon. L. P. Poland, General Sherman, Professor Agassiz, Hon. Peter Parker, Rev. Dr. John Maclean, and Professor Henry, the Secretary.

The Chancellor being unable to be present at the beginning of the meeting, Hon. Mr. Hamlin was called to the chair.

The Chancellor arriving at 7 o'clock, assumed his official position as presiding officer of the Board.

The Secretary informed the Board that since its last meeting the death of Hon. Garrett Davis of the United States Senate had occurred, and that the vacancy thus created in the Board of Regents had been filled by the appointment of Hon. J. W. Stevenson, a Senator from the State of Kentucky; whereupon, on motion of General Garfield, the following resolutions were adopted:

Resolved, That the Board of Regents have heard the announcement of the death of their highly esteemed colleague, Hon. Garrett Davis, of Kentucky, with deep and sincere regret.

Resolved, That in the death of Mr. Davis the Smithsonian Institution has lost a warm friend, an efficient supporter, and judicious adviser; and the country a patriotic, virtuous, and influential citizen.

Resolved, That these resolutions be entered upon the journal, and a copy of them be transmitted to the family of the deceased.

The Secretary presented to the Board an exhibit on a large diagram of the condition of the funds on the 1st of January, 1873, and of the receipts and expenditures during 1872.

On motion of Mr. Hamlin, these exhibits were referred to the Executive Committee.

Hon. Peter Parker, in behalf of the Executive Committee, made substantially the following preliminary report:

"The Secretary, who by law is the custodian of the Smithsonian funds, has presented to the Regents an ocular exhibit of the present condition of these funds, and the Executive Committee have, at the present time, to state that they have been laboriously engaged for several days in examining 1,395 vouchers for the expenditures of the Institution for the past year; and comparing these with the bank account, as well as the appro-

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priations from Congress, find the whole in accordance with the statement in the diagram submitted by the Secretary, there being a balance now on hand in the First National Bank of $17,811.36. At the next meeting the committee will present a detailed statement of all the accounts, with estimates of the receipts and appropriations for the year 1873."

The Secretary presented the following statement relative to the *interest* on the *Virginia* stock held by the Institution, as furnished by Riggs & Co.:

1870. Jan. 16.	2 per cent. interest on $53,500, less $5.35	$1,064 65	
1872. June 21.	½ of $1,761 coupons, $1,174, less ½, $4.40	1,169 60	
Aug. 2.	½ of $1,761 coupons, $1.174, less ½ and tax, $77.77	1,096 23	
			$3,330 48
1871. Dec. 23.	To ½ per cent. commission on funding, $88,125 20	$220 31	
1872. Jan. 12.	To ½ per cent. commission on $58,700, conversion of registered to coupon bonds	73 37	
June 21.	To express charge on $58,700, bonds sent to Richmond for affixing State seal, inadvertently omitted	29 20	
Aug. 2.	To express on $1,761 coupons to Richmond	1 20	
Aug. 2.	To express on $1,761 coupons to Richmond	1 50	
			325 58
1872. Nov. 9.	Balance paid by Riggs & Co. to the Institution		3,004 90

This communication was referred to the Executive Committee.

The subject of the deposit of the articles of fine art belonging to the Institution in the Corcoran Art Gallery was presented by the Secretary; and, on motion of General Garfield, it was

Resolved, That the Executive Committee and the Secretary report as to the character and organization of the Corcoran Art Gallery, and the plan to be adopted by the Smithsonian Institution in co-operating with that establishment and in depositing articles with it.

Dr. Maclean presented a statement relative to the claim for the portrait of Washington, and stated that a report would be presented on the subject by the Executive Committee at the next meeting.

The Secretary presented the part of his annual report of the operations of the Institution during 1872 relative to original researches, viz: the planet Uranus; the tides; altitudes of over 16,000 different places in the United States; isothermal map; rain tables; winds and underground temperatures.

On motion, the Board adjourned to meet on Monday, January 20, at 7 o'clock p. m.

MONDAY, *January* 20, 1873.

A meeting of the Board was held this day at 7 o'clock p. m.

Present: The Chancellor Chief Justice Chase, Hon. H. Hamlin, Hon. J. W. Stevenson, Hon. L. Trumbull, Hon. J. A. Garfield, Hon. L. P.

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Poland, General Sherman, Hon. Peter Parker, Professor L. Agassiz, Rev. Dr. John Maclean, and the Secretary, Professor Henry.

The Chancellor took the chair.

The minutes of the last meeting were read and approved.

Excuses for non-attendance were received from Messrs. Colfax, Cox, and Cooke.

Hon. Peter Parker submitted the report of the Executive Committee, which was read, and, on motion of Mr. Poland, was accepted.

Dr. Maclean, from the Executive Committee, presented a report adverse to the claim for a portrait of Washington painted by C. W. Peale.

On motion of Mr. Hamlin, the report was accepted, ordered to be filed, and a copy to be furnished to the claimant.

The Secretary stated that during the last session of Congress, mainly through the efforts of Mr. Hamlin, the following provision had been adopted in regard to postage facilities:

"All publications sent or received by the Smithsonian Institution, marked on each package "Smithsonian Exchange," shall be allowed to pass FREE IN THE MAIL."

[New Postal Code, 6th Sub-div., 184th Sec., June, 1872.

This does not provide for letters, nor specimens of natural history; and since the transfer of the museum of the Land-Office to the Institution, the postage on minerals sent by the United States surveyors had become a considerable item of expense. The Secretary of the Interior, however, had offered to receive for the Institution all such specimens, if sent by mail to that Department.

Mr. Hamlin stated that a bill had passed the House of Representatives abolishing the franking privilege, and if it passed the Senate the Institution would again have to pay postage.*

The Secretary stated that the New York, Newfoundland, and London Cable Telegraph Company, and the Western Union Telegraph Company had liberally granted the privilege the Institution had requested, to transmit without charge between Europe and America announcements of astronomical discoveries, such as planets, comets, &c.

On motion of Mr. Hamlin, the following resolution was adopted:

Resolved, That the thanks of the Board of Regents of the Smithsonian Institution be tendered to the New York, Newfoundland, and London Telegraph Company, and to the Western Union Telegraph Company, for their grant of the free transmission of telegrams relative to astronomical discoveries.

The Secretary stated that Mr. George Catlin, the Indian traveler and student of ethnology, who had exhibited his sketches of Indian life in the Institution, died in December last, and as it was very desirable that his valuable ethnological collection should be preserved, and, if possible, secured by Congress, it was proper that the Board of Regents should take some action in regard to the matter.

* This bill has since become a law.

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Professor Agassiz commended the collection as of great ethnological value, and expressed the opinion unhesitatingly that it ought to be purchased by the Government.

On motion of General Garfield, it was resolved that the Executive Committee ascertain from the heirs of Mr. Catlin the terms on which his Indian paintings, sketches, specimens, &c., can be procured, and furnish the information, with such recommendation as they think proper, to the Library Committee of Congress.

General Garfield presented the subject of the proposed endowment of agricultural colleges in a bill which had passed the Senate and was now before the House, and expressed the hope that some action could be taken to secure the benefit of the act to the Smithsonian Institution.

Professor Agassiz remarked that there were other institutions in the country that were well worthy to share with this Institution any benefits which might be derived from the distribution of the proceeds of the sales of the public lands; especially the Museum of Comparative Zoology in Cambridge. This museum now contains the largest collection of specimens for the illustration of some departments of zoology of any in the world, and has been supported at an annual expense of from fifty to sixty thousand dollars, principally raised from donations of the friends of the establishment. Professor Agassiz also observed that he thought Professor Henry, in the distribution of specimens abroad, ought in all cases to ask for a return of an equivalent in kind. By not doing so he interfered with the growth of other establishments of a similar character in this country, and especially with the museum at Cambridge.

In reply Professor Henry stated that the policy of the Institution from the beginning had been of a most liberal character; that its motto was "co-operation, not monopoly;" that it had endeavored to co-operate with all institutions in this country and abroad; that the bequest was for the benefit of *men*, not for men of this country alone, but of every country. Whenever specimens have been wanted for scientific research, these specimens have been sent as far as the means of the Institution would allow, and in cases where specimens were required for special investigation in this country, the Institution has endeavored to procure them for the object required. It is true a return in kind has not been asked for because the appropriation from Congress for the support of the museum has not been more than one-fourth of the actual cost, and the Institution has not had the means to pay for transportation of the specimens and the care of those not immediately wanted for research. It has, however, in all cases distinctly announced, in presenting specimens to foreign institutions, that suitable returns would be expected from the duplicates in their collections whenever the Institution might desire to obtain them.* The Institution has in this way a large accumulation of credit abroad, and now that the Government has commenced to make

*See Appendix "G" to the Journal of the Board.

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more liberal provision for the support of the National Museum, it may begin to ask for specimens in return, and in doing so may harmoniously co-operate with the Museum of Comparative Zoology by procuring specimens for it, and in receiving from the latter others in return.

At the request of the Board, Professor Agassiz then gave an account* of his late expedition from Boston through the Straits of Magellan to San Francisco, in the steamer Hassler, of the United States Coast Survey, after which the Board adjourned to meet at the call of the Secretary.

WEDNESDAY, *February* 13, 1873.

A meeting of the Board of Regents was held this day, at 7 o'clock p. m. Present: Chief Justice Chase, Chancellor, Hon. H. Hamlin, Hon. L. Trumbull, Hon. J. A. Garfield, Hon. L. P. Poland, Hon. Peter Parker, Hon. H. D. Cooke, and the Secretary, Professor Henry.

The Chancellor took the chair.

The minutes of the last meeting were read and approved.

Dr. Parker presented the following report of the committee relative to the Corcoran Art Gallery:

The committee to whom was referred the subject of inquiry into the character and organization of the Corcoran Art Gallery,† and the plan (if any) to be adopted by the Smithsonian Institution in co-operating with that establishment and in depositing articles with it, and report thereon, have to state: They learn that the Corcoran Art Gallery was incorporated by act of Congress on the 24th of May, 1870, [as appears from Statutes at Large, Forty-first Congress, second Session, chapter 3, page 139,] and is in no way connected with the District or territorial government of Washington.

Your committee have conferred with Mr. W. W. Corcoran, and learn from him his desire in relation to the art gallery bearing his name is to make it one of very high order of art, and, with some exceptions which he specified, he is of the opinion the specimens of the Smithsonian will not come within the scope of his design. The proffer of the aid of the Smithsonian Institution, through its extensive foreign correspondents and agencies, in collecting valuable works of art from abroad, will be highly appreciated by Mr. Corcoran and the Directors of the Corcoran Art Gallery.

PETER PARKER,
W. T. SHERMAN,
Committee.

FEBRUARY 13, 1873.

On motion of Mr. Hamlin, the following resolution was adopted:

Resolved, That the report of the committee be accepted, and, in view of the facts stated, no further action in the premises is required, except

*See Appendix "A" to Journal of the Board.
†See Appendix "C" to Journal of the Board.

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so far as relates to co-operation of the Smithsonian Institution in obtaining for the Corcoran Art Gallery contributions from abroad when requested by the directors and at the expense of the corporation.

The Secretary announced the death of Professor James H. Coffin, who had for many years been associated with the Institution in its meteorological work, and had nearly finished a very elaborate paper on the winds of the globe, prepared from material furnished by the Institution, and to be published as a Smithsonian Contribution to Knowledge. He spoke in the highest terms of the character of Professor Coffin as a scientific investigator, an able teacher, and exemplary Christian.

On motion of Hon. Mr. Trumbull, the following resolutions were adopted:

Resolved, That the Board of Regents have heard with profound sorrow of the death of Professor James H. Coffin, of Lafayette College, Easton, Pennsylvania.

Resolved, That in the death of Professor Coffin the Smithsonian Institution has lost a valuable collaborator who has assiduously labored in connection with it in the cause of science for more than twenty years; the country has lost an efficient teacher, an honest, truthful, and industrious man, and the world an original contributor to the science of the day.

Resolved, That a copy of these resolutions be transmitted to the family of the deceased.

The Secretary stated that since the last meeting he had received a telegram from Dr. C. H. Peters, of Clinton, New York, announcing the discovery of a new planet, and that he had availed himself of the facilities offered by the Cable and Western Union Companies, and had sent a dispatch in regard to the discovery to the European observatories.

The Secretary informed the Board that JAMES HAMILTON, of Carlisle, Pennsylvania, recently deceased, had left a legacy of one thousand dollars to the Board of Regents of the Smithsonian Institution, the interest to be "appropriated biennially, either in money or a medal, for such contribution, paper, or lecture on any scientific or useful subject as the secretaries may approve." Action on this subject was postponed until more definite information had been received.*

The Secretary stated that an amendment had been offered in the House of Representatives, but not at the instance of the Institution, to Senate bill 693, "to provide for the further endowment and support of colleges for the benefit of agriculture, &c., &c.," as follows:

"And it is further provided, that the share allotted to the said District of Columbia shall be appropriated to the Smithsonian Institution, to be expended under the direction of the Board of Regents of said Institution, for the support of the National Museum, and in distributing specimens and publications to the colleges named in this act and to other institutions."

* See Will in Appendix "F" to Journal of Board.

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By this bill the Secretary of the Treasury is to invest annually one-fourth of the net amount of sales of the public lands for each year, in United States bonds, bearing five per cent. interest, and is to give to each State and to the District of Columbia an equal share of this interest, provided that the appropriation for any one share shall not exceed in a single year the sum of $50,000.

The opinion was expressed by the Regents that the bill might pass, although it was believed that the income to be derived from the sales of the public lands would be inconsiderable for many years.*

The Secretary stated that the plan of the Smithsonian Institution for increasing knowledge had met with such favor, that other persons, in imitation of James Smithson, had established foundations to advance science, and gave an account of the bequest of the late Professor ALEXANDER DALLAS BACHE; the foundation for lectures by Dr. J. M. TONER, of Washington, and the gift of Professor TYNDALL of the proceeds of his recent lectures in this country.

In each of these cases, Professor Henry had been made the chairman of the boards of trustees appointed to carry out the wishes of the donors.

On motion of General Garfield, it was

Resolved, That a full account of the Bache, Toner, and Tyndall scientific foundations, or trusts, be published in the annual report of this Institution, together with a letter from Professor Tyndall to Professor Henry.†

The Secretary stated that he had transmitted to Congress the annual report of Professor J. W. Powell, relative to his geological and trigonometrical survey of the Colorado of the West and its tributaries.

The Secretary presented his annual report for the year 1872, which was read in part, when, on motion of Dr. Parker, it was

Resolved, That the further reading of the report of Professor Henry be dispensed with, and that it be submitted by the Secretary to Congress.

On motion, the Board then adjourned *sine die*.

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* This bill did not pass the House of Representatives.

† See Appendix "B," "D," "E" to the Proceedings of the Board.

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APPENDIX TO THE JOURNAL OF PROCEEDINGS OF THE BOARD OF REGENTS.

A.

PROFESSOR AGASSIZ'S NARRATIVE.

"I was invited by Professor Peirce to take passage in the Hassler, while she was going to the field of her duty on the coast of California, as surveying vessel, provided that my expenses were borne by other parties so that the Coast Survey should not be put to any additional outlay. In consideration of this proposition, my friends in Boston liberally subscribed $20,000 to enable me to make as thorough a series of investigations of animal life and other physical objects as possible, and a little more than this sum was expended.

"We left Boston on the 4th of December, 1871. Our first observations of much interest were upon the Gulf weed, with its well-marked varieties distinguished by differences of stem and leaves. We made large collections of the hydroid communities inhabiting the sargossum, and also of the small fishes, crustacea and other animals finding shelter within its branches. I saw no reason to suppose that the sargossum originates as a floating-plant. On the contrary, all the masses we found, however large, bore marks of having been torn from some attachment. I have already given an account of the nest of the chironectes built of gulf weed, and picked up by us.

"Our first port was Saint Thomas, where we anchored on the 15th of December. Here we made very large collections both of marine and land animals, fish, corals, sea-urchins, star-fishes, and ophiurans, crustacea, shells, lizards, snakes, toads, and frogs, insects and birds. We shipped from Saint Thomas alone eleven barrels and boxes of specimens. Barbadoes was our next collecting-ground. There we made our first cast of the dredge and with remarkable success. The collections forwarded from this port were not so large, but were perhaps more interesting than those of Saint Thomas. The fauna upon the shoals off the Island of Barbadoes strangely resembles that of a past geological time. The comatulæ, pedunculated crinoids, pleurotomariæ, siphoniæ, and cnemidia found upon these shoals recall forms which belonged especially to the Mezozoic ages. This dredging was also rich in corals, sea-urchins, starfish, and ophiurans, and in a great variety of beautiful and rare shells. In some notes handed to me by Count Pourtalés, he says of this same dredging, December 29th and 30th off Barbadoes, about six miles north of Bridgetown, numerous casts of the dredge were taken in depths varying from 17 to 120 fathoms with very rich returns in mollusca, crusta-

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cea, echinoderms, polyps, and sponges; many of them were new to science, others either very rare or of much interest on account of their geographical distribution. Pleurotomaria is an example of the former; asthenosoma, ceraiophozus, rhizocrinus, and other echinoderms, of the latter. Deep sea-corals were obtained in considerable quantity, but none appear to be identical with those of the North Atlantic; they also seem to differ more from those of Florida than would have been expected.

"Between Barbadoes and Brazil we had little opportunity for observation, except upon the motions of the flying-fish, the habits and appearance of the physalia, &c. But we had an interesting dredging about a day's sail south of Pernambuco in 500 fathoms, from which we obtained, besides other specimens, a living shell, closely allied to the Pecten paradoxus, as described by Goldfuss. Another cast, about 40 miles east of Cape Frio, in 45 fathoms, gave us a new crustacean, singularly like the ancient trilobites. With reference to temperature off the coast of Brazil, Count Pourtalés' notes give the following details: 'Off Maceio, Brazil, January 17, in latitude 9° 45′ S., longitude 35° 0′ west, the surface-temperature was 80°.5. At 100 fathoms it was 67°; at 485 fathoms, 44°.5; at 556 fathoms, (a few miles farther west,) 42°.5; in latitude 11° 49′ south, longitude 37° 10′ west, surface, 80°.3; at 613 fathoms, 39°. A number of dredgings were taken on the same parallel, but nearer shore, with moderate success.' He adds that subsequent casts of the dredge were taken at various points along the east coast of South America, and in the Strait of Magellan, but almost always in depths less than 50 fathoms where temperature presented no particular interest.

"A delay of three weeks at Rio de Janeiro interrupted our work at sea, but I made use of it to collect largely in the market of Rio de Janeiro and in the neighboring rivers and brooks. The most valuable contribution to science made there, however, consisted in preparations of large numbers of fish-brains, both marine and fresh-water.

"Our next port was Montevideo. Here, however, the quarantine prevented us from entering the city, but I had an opportunity of studying glacial phenomena on a hill in the harbor, where I was allowed to land and where I found erratic material of an unquestionably glacial character, and other evidences of glacial action. Indeed, the most striking fact of all is that the hill itself is a true 'roche moutonnée.' On leaving Rio de la Plate, February 22, we dropped the dredge in some seven fathoms, and it came up laden with valuable specimens. Among other things this cast gave us a large voluta and the egg of a voluta, (of which we found many afterward belonging to different kinds of volutas,) many olivas, serulas, renillas, crustaceans and echinoderms. It is not worth while to record all our dredgings; they were frequent, sometimes very remunerative, and sometimes not at all so. One dredging, of especial value for its rare mollusks and echinoderms, was taken off the mouth of the Rio Negro.

"The next point of great interest was the gulf of San Mathias, at the

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head of which is the so-called Port San Antonio. In this region our collections were very large and various. Among our treasures was a very interesting collection of tertiary fossils in this bay. The cliffs were largely composed of them. My original programme had included a reconnoissance of the rivers Negro and Santa Cruz, and a visit to the Falkland Islands, where I was especially anxious to have a look at the so-called "rivers of stone," believing, as I do, that they are of glacial origin. But the circumstances of the vessel and the lateness of the season made it important to hurry on, and I reluctantly relinquished this part of my scheme. We touched, therefore, at no other point between the gulf of San Mathias and the strait of Magellan, though we paused for a cast of the dredge off the gulf of St. Georges, and were rewarded by some superb star-fishes of immense size, (astrophyton or basket-fish,) besides other valuable specimens.

"We rounded Cape Virgins on the 13th of March, and made our first anchorage at Possession Bay. My published reports have already given some account of our work in this region. The most important results obtained in this locality were Count Pourtalés' discovery that Mount Aymon is an extinct volcano, with a very perfect crater, and forming the nucleus, as it were, of a cluster of smaller volcanoes; beside some less striking geological observations of my own. In the strait of Magellan, and in Smythe's Channel, we passed three weeks, anchoring every night. The zoological results throughout this region were very satisfactory. We made large collections; chiefly marine, of course. But the glacial phenomena here interested me more deeply than the fauna. From the character of the drift, and the constant presence of erratic materials, evidently quite foreign to the soil, and recurring along the Patagonian coast throughout the strait of Magellan, and, as I afterward found, high up on the Chilian coast; from the glacier-worn surfaces on the two sides of the strait, as compared with each other, and on the walls of Smythe's Channel, I satisfied myself that there has been a movement of ice from south northward, preceding all local glacial phenomena, the latter being indeed only the remnant of the former.

"Leaving Smythe's Channel we kept along the coast to the southern end of Chiloe Island, making a run up the gulf of Corcovado in the hope of passing through the archipelago of Chiloe. As we had no charts, however, the captain feared to attempt the inside passage, and after making some collections in Port San Pedro we returned to the open sea, and reached San Carlos de Ancud, at the northern end of the island, on the 8th of March. Here I found again the erratic of the straits and of the Patagonian coast resting upon the breccia of Ancud, showing the chronological relation of the volcanic formations of this region to the glacial phenomena. From San Carlos we proceeded with no pause (except at Lota for coal) to the bay of Concepcion. Here we remained a fortnight, and at no point did I make more full and valuable collections. From Concepcion Bay the Hassler went to Juan Fernandez,

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but as I wished to see something of the geology between the coast and the Andes, I proceeded by land to Santiago. My observations here confirmed my previous impressions as to the glacial phenomena. There is very little evidence of local action proceeding from the Andes, but the whole Chilian valley lying between the coast-range and the Andes proper has been modeled in a south-northerly direction by ice. The valley is, in short, a glacier bottom.

"At Valparaiso we joined the vessel again, and I add some notes from Count Pourtalés concerning temperatures based upon soundings, &c., taken on their voyage to and from Juan Fernandez: 'In the Pacific Ocean soundings were taken between Talcahuana, Chili, and Juan Fernandez. The hundred-fathoms line was found to be about 35 miles off shore. At a distance of 52 miles the depth was 1,006 fathoms. In latitude 35° 30′ south and longitude 75° 11′ west the depth was 2,410 fathoms, temperature 35°. Mud and fragments of a delicate sponge were obtained by the lead; but the dredge-line having been damaged by dampness, parted when hauling up. About two miles north of Juan Fernandez, surface temperature 61°; at 377 fathoms, 41°.5; at 656 fathoms, bottom temperature 61°. The dredge brought up only a few small stones. About three miles off the northwest corner of the same island the depth was 1,144 fathoms, bottom temperature 36°. The dredge brought up nodules of clay, pebbles, worm-tubes, and a small isis. About 25 miles north of the island a depth of 2,214 fathoms was found, with a bottom temperature of 36°; bottom of reddish mud. The dredge was lost again, with a large quantity of line. On the way from Juan Fernandez to Valparaiso a cast of the lead was taken in latitude 33° 33′ south, longitude 77° 2′ west; depth, 1,585 fathoms, bottom temperature 36°; fine white globigerina mud. The hauling up of the line took more than six hours, on account of the constant precautions needed to prevent it from parting. Further attempts were thereafter given up.'

"From Valparaiso we proceeded up the coast, touching at all the principal points, and collecting everywhere. One of our richest collecting-grounds was Parraca Bay, where the fauna was of astonishing richness and variety. The geology was also exceedingly interesting, and I was indebted to Lieutenant Murray Day for a very detailed map of the drift-formation in that region.

"From Payta we struck off to the Galapagos, where we arrived on the 10th of June, and remained till the 19th, touching at Charles Island, Albemarle, Saint James, Jarvis, and Indefatigable Islands. The zoology of these islands is intensely interesting, not only from the peculiar character of the fauna, but also from the physical conditions in which it occurs, all these islands being of such recent volcanic formation as to preclude the idea of a migration of animals from the mainland, and their subsequent adaptation to new circumstances. Our collections in the Galapagos were exceptionally large. Iguanas, both marine and terrestrial, (the

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two species of amblyrhynchus, first made known by Darwin,) lizards, birds, seals, turtles, besides a great variety of fishes, crustacea, mollusks, and radiates.

"From the Galapagos we proceeded to Panama, where we arrived on the 25th of June. We were detained here for three weeks, but they were very profitable weeks for the collections. The loss of the greater part of our dredging-apparatus between Juan Fernandez and Valparaiso had indeed made dredging in deep waters impossible, but we were the more industrious in collecting in shoal waters along shore and on land. Our next port was Acapulco, where we arrived on the 4th of August, and remained for some days. There, also, we were successful in collecting, and not less so in Magdalena Bay, where we passed two days in drawing the seine. We made no pause between Magdalena Bay and San Diego, where we arrived on the 18th of August. In the Bay of San Diego we added very considerably to our collections. Here, and indeed all along the coast from Valparaiso northward, we found many specimens of cetaceans and selachians. We gathered a large number of cestracions alone.

"Leaving San Diego on the 28th of August, we reached San Francisco on the 31st. Here our voyage ended, but I remained in San Francisco for some weeks for the sake of completing collections formerly made for me in this region. Both there and in Sacramento, with the aid of friends, I succeeded completely in my object.

"It would be impossible for me now to give you more than a very vague and imperfect idea of the extent and value of the collections derived from this voyage. Indeed, I do not fully know it as yet myself, the unpacking being but just begun. The number of barrels and cases, however, forwarded to Cambridge during the ten months of our absence was 265—almost a barrel a day. It would have been simply impossible for me to collect on this scale, but for the cordial assistance I received from the captain and officers of our ship, and, under their direction, from the men, who were always cheerfully ready for the work of the seine and dredge. I was also greatly indebted to Dr. Hill and Dr. White, the physicists of the expedition, who, whenever not engaged in their own duties, were ready to aid me in every way. I should not forget to mention that Dr. Hill made, also, a most valuable and admirably preserved collection of marine plants, gathered at every anchorage where time was allowed for landing. As to the special work of the chemical and physical departments, under the charge of Dr. Hill, ex-president of Harvard, and Dr. White, of Philadelphia, I can give you little information. You could, no doubt, learn all details respecting this part of the work by application to these gentlemen, or to the Superintendent of the Coast Survey.

"My own special party for zoological work consisted of Count Pourtalés, Dr. Steindachner, and Mr. Blake. Count Pourtalés, while sharing in all the general work of the expedition, had special charge of the dredging

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operations. Dr. Steindachner, although an admirable collector in all departments, was especially engaged in the care of the ichthyological collections. His great knowledge and untiring industry made his assistance invaluable. Indeed, without him I could not have carried out the comprehensive scheme for collecting which I had laid out. Mr. Blake had special charge of the mollusks, and his time was chiefly employed in the drawing of perishable specimens. As I cannot give you an accurate summary of the zoological collections, I will give you a slight sketch of my general scheme, alluded to above, that you may understand their significance as a whole.

"I have endeavored, in the first place, to collect as many specimens of the same species as possible, in every stage of growth and every condition of development, in order to ascertain the range of variation in each species. My second object was to learn the boundaries of the different faunæ, especially along the Pacific coast from the strait of Magellan to California. In this I have included, wherever it was possible, the fishes from the rivers on the western slope of the continent, for comparison with those on the eastern; but this part of my plan was difficult of execution, because I had not the means of collecting in land.

"During our whole journey I was careful to make, or to have made, large numbers of anatomical preparations of such parts of marine animals as can rarely be well studied from alcoholic specimens. The most valuable of these preparations are those of fish brains.

"I need hardly add that we owed the great opportunity for scientific investigation afforded by the voyage of the Hassler to the liberal policy of the Superintendent of the Coast Survey, who is ever ready to combine the larger interests of science with the special work of the survey, when it can be done without detriment to the latter. I should add, however, that the means for making the zoological collections were contributed by gentlemen of Boston, who raised nearly $20,000 for the purchase of alcohol, jars, and other apparatus for collecting on a large scale, and for charges of freight in forwarding the specimens from foreign ports. The latter charges were, however, comparatively small, owing to the liberality of both railroad and steamship companies, of the commanders of our naval forces in various ports, to whom I had special recommendations from the Secretary of the Navy, and of the captains of vessels employed upon whaling voyages or in private mercantile enterprises."

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B.

BACHE FUND.

Extracts from the will of Alexander Dallas Bache. Dated March 18, 1862.

Item. As to all the rest and residue of my estate, including the sum of five thousand dollars placed at the disposal of my wife, in case she should not desire to make any disposition of the same, I direct my executors, hereinafter named, to apply the income thereof, after the death of my wife, according to and under the directions of Joseph Henry, of Washington, Louis Agassiz and Benjamin Peirce, of Harvard College, Massachusetts, to the prosecution of researches in physical and natural science, by assisting experimentalists and observers in such manner and in such sums as shall be agreed upon by the three above-named gentlemen, or any two of them, whom I constitute a board of direction for the application of the income of my residuary estate, for the above objects, after the death of my said wife. The class of subjects to be selected by this board, and the results of such observations and experiments, to be published at the expense of my trust estate, under their directions, out of the income thereof, but without encroaching on the principal.

In case of the death or inability to act of all or any of the three gentlemen I have named, in my wife's lifetime, my will is that she shall supply their places in the board of direction by an instrument of writing, either testamentary or otherwise, desiring that in the selection of the persons to administer the income of the trust funds hereby created, she will have regard to the selection of persons whose attention has been directed to the same branches of science as those I have named, and so that each of the departments of physics, mathematics, and natural history shall be represented in the board. In case of any vacancy occurring in the board of direction after its organization, and after the death of my wife, by reason of the death, inability, or refusal to act, or resignation of any of the members, my will is that the surviving or remaining member or members for the time being shall have power to fill vacancies so occurring in the board by the selection of other person or persons to fill such vacancies, and so on, from time to time, as vacancies shall occur.

My intention being that the board of direction shall have power to continue its existence, and to filling all vacancies occurring in their body from time to time.

I direct that a minute of their proceedings be kept, and that the appointment of any member by the board shall be notified in writing to the trustees for the time being of my residuary estate.

In the event of any failure of the board for the time being to direct the application of the income of my said residuary estate, or to continue its existence by filling vacancies occurring in their body, my will is that

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the application of the income thereof, for the purposes and objects declared in this clause of my will shall be made by the trustees, under the direction of the American Philosophical Society, of Philadelphia.

Extract from the codicil to the will of Alexander Dallas Bache, dated July 15, 1863.

Item. My will is that upon the death of my wife all the rest and residue of my estate shall be paid over to and rest in the corporation of "The National Academy of Sciences," incorporated by act of Congress passed the third day of March, A. D. 1863, whom I hereby appoint trustees in the place of my said executors, under the fourth clause of my said will, to apply the income according to the directions in the said clause contained, to the prosecution of researches in physical and natural science by assisting experimentalists and observers in such manner and in such sums as shall be agreed upon by the board of direction in the said clause named.

My will further is that in case of any failure of the board for the time being to direct the application of the income of my residuary estate, or to continue its existence by filling vacancies occurring in their body, the application of the income thereof for the purposes and objects declared in the said clause shall be made under the directions of the National Academy of Sciences, instead of the American Philosophical Society, of Philadelphia. In all other respects the said application of the income to the purposes aforesaid to be made by the same persons, and under the same rules as I have prescribed in the said clause of my will.

C.

CORCORAN ART GALLERY.

Letter from Mr. Corcoran to the Trustees.

WASHINGTON, *May* 10, 1869.

GENTLEMEN: It is known to you that the building at the northeast corner of Pennsylvania Avenue and Seventeenth street was designed by me for the encouragement of the fine arts, as is indicated by the dedication upon its front.

The work was begun in the year 1859, and was prosecuted with the heartiness naturally incident to such an undertaking, until it was interrupted by the breaking out of the late civil war, when the public exigencies led to the immediate occupation of the building for military purposes; and to these uses it has been devoted ever since, until, being no longer required by the War Department, it is about to be restored to my possession.

It was my cherished hope to have placed the proposed establishment,

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complete in all its appointments, in successful operation before divesting myself of the title by any formal instrument, but the years which have thus passed away, and the accumulation of other cares and duties, warn me no longer to indulge the pleasing anticipation.

I have, therefore, not doubting your general interest in the subject, taken the liberty of executing to you, as trustees, a deed, which I herewith deliver, sufficiently defining the trusts which I ask you to accept.

In addition to the title to the property itself, you will observe that the instrument vests in you, for the purposes of the trust, the right to receive the rents, wholly unpaid, for the period during which it has been occupied by the Government, now nearly eight years, which will doubtless be adjusted with you, in the absence of any special agreement, upon fair and, perhaps, liberal terms.

As soon as the interior of the building shall have been completed according to the original plans, (which will be placed at your disposal,) for which the rents in arrears will more than suffice, I shall ask you to receive as a nucleus my own gallery of art, which has been collected at no inconsiderable pains, and I have assurances from friends in other cities, whose tastes and liberality have taken this direction, that they will contribute fine works of art from their respective collections.

I may add, that it is my intention to provide further endowment of the institution in such manner and to such extent as may consist with other objects which claim my attention; and I venture to hope that, with your kind co-operation and judicious management, we shall have provided, at no distant day, not only a pure and refined pleasure for residents and visitors at the national metropolis, but have accomplished something useful in the development of American genius.

I am, gentlemen, with great respect and regard, your obedient servant,

W. W. CORCORAN.

To JAMES M. CARLISLE, JAMES C. HALL, GEORGE W. RIGGS, ANTHONY HYDE, JAMES G. BERRET, JAMES C. KENNEDY, HENRY D COOKE, JAMES C. MCGUIRE, WILLIAM T. WALTERS.

Reply of the Trustees.

WASHINGTON, *May* 10, 1869.

DEAR SIR: We have accepted the trusts confided to us by your deed of this date, in the formal manner indicated by the deed itself.

But we desire, individually and collectively, to add the expression of our personal appreciation of the privilege of endeavoring efficiently to administer such an institution, projected spontaneously by your liberal mind and securely founded by your sole munificence.

While we cannot doubt that, at least in the time of our successors, all your anticipations will be realized, we sincerely hope that you may

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yourself live to enjoy the high and pure gratification of witnessing the complete success of your generous intentions.

With great respect and warm regard, we remain, very truly, yours,

J. M. CARLISLE.
J. C. HALL.
GEO. W. RIGGS.
A. HYDE.
JAMES G. BERRET.*
JAMES C. KENNEDY.†
HENRY D. COOKE.
J. C. MCGUIRE.
W. T. WALTERS.

WILLIAM W. CORCORAN, *Esq.*

Deed of gift and trust of the Corcoran Art Gallery.

This indenture, made this tenth day of May, in the year of our Lord eighteen hundred and sixty-nine, by and between William W. Corcoran, of the city of Washington, District of Columbia, of the first part, and James M. Carlisle, James C. Hall, George W. Riggs, Anthony Hyde, James G. Berret, James C. Kennedy, Henry D. Cooke, and James C. McGuire, of the city of Washington, and William T. Walters, of the city of Baltimore, State of Maryland, of the second part, witnesseth:

Whereas the said William W. Corcoran, in the execution of a long-cherished desire to establish an institution in Washington City to be "dedicated to art," and used solely for the purpose of encouraging American genius, in the production and preservation of works pertaining to the "fine arts," and kindred objects, has determined to convey to a board of trustees the property hereinafter described, to which he may hereafter make other gifts and donations, to be held by said board, and used for the purposes aforesaid: Now, therefore, the said William W. Corcoran, in consideration of the premises, and of the sum of $1, current money of the United States, to him in hand paid by the said parties of the second part, the receipt whereof is hereby acknowledged, hath granted, bargained, and sold, aliened, enfoeffed, and conveyed, and by these presents doth grant, bargain, and sell, alien, enfeoff, and convey unto the said parties of the second part, and the survivors of them, and the heirs and assignees of such survivor—

Lots numbered 5, (five,) 6, (six,) 7, (seven,) and 8, (eight,) in square numbered 167, (one hundred and sixty-seven,) in the city of Washington, and District of Columbia, as the same is laid down and distinguished upon the public plat of said city, fronting 196 feet 9 inches, more or less, on President's Square, and 160.17 feet, more or less, on Seventeenth Street west, together with, all and singular, the buildings, improvements,

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*H. C. Matthews has been elected a trustee vice J. G. Berret.

†Prof. Joseph Henry has been elected a trustee vice J. C. Kennedy.

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hereditaments, and appurtenances thereto appertaining, or in any wise belonging, and all the estate, right, title, and interest of the said party of the first part in and to the same:

To have and to hold, all and singular, the lots and parcels of ground, and premises aforesaid, with the appurtenances, unto and to the use of them, the said parties of the second part, and the survivors and survivor of them, and the heirs and assigns of such survivor, in trust, nevertheless, and to and for the intents and purposes hereinafter expressed and described, that is to say:

First. That the said parties of the second part shall, without unnecessary delay, after their acceptance of this trust, to be signified by their signing and sealing the memorandum to that effect hereunder written, organize themselves into a permanent board of trustees, with such officers to be selected from their own number as to them may seem necessary or convenient for the orderly management of this trust, and the more efficient attainment of the ends and objects designed by the said party of the first part, as indicated by his general intent, to be gathered from this instrument in all its parts and provisions, and with the same intent and for the same ends and objects, shall make, and as often as may be necessary from time to time, make, alter, amend, repeal, and re-enact, in whole or in part, all necessary by-laws, rules, and regulations in the premises, in execution of, and not inconsistent with the provisions and true intent of this instrument; in all which they shall act by the concurrence of a majority of the whole number of trustees.

Secondly. That when the number of the said original board of trustees, being the said parties of the second part, shall, by death, resignation, or inability, to be ascertained by a resolution of the said board acting by a majority of the whole number, shall have been reduced below the number of nine members, the remaining members shall elect suitable persons, in their discretion, from time to time, as often as may be necessary, so that the board shall always be composed of nine members.

Thirdly. That all the property, real, personal, and mixed, rights, credits, choses in action, or other valuable thing whatsoever hereby conveyed or intended to be conveyed, or which may hereafter be conveyed, given, or transferred and assigned and delivered to the said board of trustees, whether composed of the said parties of the second part or of their successors, chosen and elected as hereinbefore provided, whether in whole or in part, shall be held, managed, limited, used, and devoted to executing the trusts, and giving effect, according to the best judgment of the said board of trustees, from time to time; and all legal rights and titles in the premises shall be taken and held in such manner, and with such legal forms, as shall serve the trusts, intents, uses, and purposes declared or plainly indicated or implied in and by the terms of this instrument.

Fourthly. The property as received and held, or which may be received and held by the said board of trustees, shall be held, used, managed,

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and disposed of by them and their successors and assigns, whether under this instrument alone or under any act of incorporation hereafter to be procured, for the perpetual establishment and maintenance of a public gallery and museum for the promotion and encouragement of the arts of painting and sculpture, and the fine arts generally, upon such system and with such regulations and limitations as the board of trustees may, from time to time, whether corporate or incorporate, prescribe, limit, and ordain: *Provided always*, That the gallery and museum shall be open to visitors, without any pecuniary charge whatever, at least two days in each week, for such convenient and customary hours as shall be, from time to time, prescribed and made public, and at such other times, not being such public days as aforesaid, such moderate and reasonable fees for admission may be prescribed and received, to be applied to the current expenses of preserving and keeping in proper order the building and its contents.

Fifthly. While the officers necessary or appropriate to the organization of the board of trustees shall be elected from their own number, it is understood that the board shall and may, at its discretion, at all times, employ other persons to be the officers, agents, and servants of the board, for the orderly and efficient management and conduct of the institution.

Sixthly. The system and the appropriate measures for increasing the collection of paintings, statues, and kindred works of art, of which the private gallery of the party of the first part will form the nucleus, and such other voluntary donations as the trustees may from time to time receive, are confided to the direction and judgment of the trustees, as is also the management generally of the institution.

Seventhly. The general intent of the said party of the first part being expressed in general terms in the premises and recitals of this instrument, and further indicated, with certain specifications, in the aforegoing articles, numbered from one to six, inclusive, it is hereby declared that, all and singular, the gifts, grants, conveyances, and assignments herein expressed and set forth are, to and for the trusts, intents, and purposes so as aforesaid expressed, implied, set forth, or indicated, and to none other whatsoever; and that, while it is the intention of the grantor and donor herein that no unruly, technical, or formal breach of, or departure from, the terms and conditions of this trust shall operate as any forfeiture or defeasance in favor of his heirs, or of any claiming in his right, it is hereby declared, and these presents are upon the express and strict condition, that these presents, and every matter and thing hereinbefore contained, and every estate, right, title, interest, and power thereby given, granted, conveyed, and limited, shall cease and determine, and become utterly void and of no effect, whensoever it shall be decreed, adjudged, or declared, by the highest judicial authority having jurisdiction, upon a proper proceeding, in law or in equity, to be instituted by the heirs, devisees, or assigns,

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of the said party of the first part, that the real estate hereinbefore conveyed shall have been diverted from the purposes of this trust, to be gathered from this instrument in all its parts and provisions, so as substantially to defeat or plainly to be inconsistent with and repugnant to this trust, construed and interpreted in a liberal and sensible spirit; and thereupon, as in case of a breach of a strict condition-subsequent, the heirs, devisees, assigns, or other proper legal representatives in the premises of the said William W. Corcoran, shall be entitled to re-enter upon the said real estate as of his, the said Willim W. Corcoran's, right and title prior to the execution of these presents, and as if the same had never been executed; and in like manner all and every other estate, property, chattel, or valuable thing, the title to which shall have proceeded in the premises from the said William W. Corcoran to the said trustees or their successors and assigns, shall, as far as may be consistent with the rules and principles of law and equity, revert and be revested in right of the said Corcoran or his proper legal representatives therein.

Eighthly. That the said board of trustees may at any time hereafter, in its discretion, apply for and accept an act of Congress incorporating them and their successors, so as to facilitate the execution of this trust, by vesting the same in a perpetual body-corporate, with the like powers and for the same trusts, intents, and purposes herein declared, expressed, or indicated, but for no other trusts, intents, or purposes whatsoever; such act of incorporation to refer to this deed, and to be expressed to be in execution of the trusts thereof; and thereupon the said parties of the second part, and the survivors and survivor of them, or the heirs and assigns of such survivor, shall execute such conveyances as may be necessary to transfer the whole property of this trust to such corporation, upon the trusts of this deed.

And whereas the lots of ground and improvements hereinbefore described and referred to have, by reason of the exigencies of the public service of the United States, been rented and occupied for the public use, without any special contract, but subject to the constitutional provision that "private property shall not be taken for public use without just compensation," which just compensation for the whole period of such occupation by the United States now remains to be paid; and considering the same properly to belong to this trust, as being of the rents, issues, and profits of the ground and buildings which he had heretofore, and as early as the year 1859, devoted and dedicated to the trusts and purposes hereinbefore formally declared: Now, therefore, in consideration of the premises, and of the sum of $1 by the said parties of the second part to him in hand paid, he, the said party of the first part, hath assigned, transferred, and set over, and by these presents doth assign, transfer, and set over unto the said parties of the second part and the survivors and survivor of them, and the executors, administrators, and assigns of such survivor, all and singular the rents, issues, and profits of the lots of ground and improvements hereinbefore described, for and

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during the whole period of the occupation and possession of the same by the Government of the United States, and all the just compensation which may be due from the United States for the public use of the same, hereby authorizing and empowering the said parties of the second part, or a majority of them, either by themselves or by any substituted attorney or attorneys, to be named and appointed by them, or a majority of them, to acquit and release and receipt for the same in any sufficient legal form of acquittance which may be according to law, as fully as he, the said party of the first part, could personally release and acquit the same.

Which rents, issues, and profits, and just compensation for the public use of the said property shall be received and held by the said parties of the second part for the same uses, intents, and purposes hereinbefore declared; but shall, as far as may be necessary, be applied, before all other objects, to the completion of the interior of said building, and to putting it in a condition to be immediately applied to the primary intents and purposes of this trust, as expressed in the recital in the premises of this deed.

In testimony whereof the said party of the first part hath hereunto set his hand and affixed his seal, the day and year first hereinbefore written.

W. W. CORCORAN.

Signed, sealed, and delivered in the presence of—

JOHN HUNTER.

A. T. BRICE.

We jointly and severally accept the trusts of the aforegoing deed.

Witness our hands and seals the said tenth day of May, eighteen hundred and sixty-nine.

JAMES M. CARLISLE.
JAMES G. BERRET.
W. T. WALTERS.
ANTHONY HYDE.
JAS. C. MCGUIRE.
GEO. W. RIGGS.
HENRY D. COOKE.
J. C. HALL.
JAS. C. KENNEDY.

District of Columbia, County of Washington:

I, Whitman C. Bestor, a notary public in and for Washington County aforesaid, do hereby certify that William W. Corcoran, the party of the first part to a certain deed, bearing date the tenth day of May, A. D. eighteen hundred and sixty-nine, and hereto annexed, personally appeared before me, in the county aforesaid, on the day of the date hereof, the said William W. Corcoran being personally well known to me to be the person who executed the said deed, and acknowledged the same to be his act.

Given under my hand and notarial seal this tenth day of May, eighteen hundred and sixty-nine.

WHITMAN C. BESTOR,
Notary Public.

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D.

TONER LECTURES.

Deed of conveyance from Dr. J. M. Toner to five trustees, instituting the Toner lectures at the city of Washington, and establishing a permanent and increasing fund for their support and continuance annually.

This indenture, made this thirteenth day of April, in the year of our Lord one thousand eight hundred and seventy-two, between Dr. Joseph M. Toner, of the city of Washington, in the District of Columbia, of the first part, and the Secretary or chief scientific officer of the Smithsonian Institution, (for the time being Professor Joseph Henry;) the Surgeon-General of the United States Army, (for the time being J. K. Barnes, M. D.;) the Surgeon-General of the United States Navy, (for the time being J. M. Foltz, M. D.;) the president of the Medical Society of the District of Columbia, (for the time being Grafton Tyler, M. D.;) of the second part, all at present residing in said District of Columbia:

Whereas the said party of the first part, believing that the advancement of science—that is, a knowledge of the laws of nature in any part of her domain, and particularly such discoveries as contribute to the advancement of medicine—tends to ameliorate the condition of mankind, hath determined to convey and transfer to the said parties of the second part, and their successors forever, in their several official positions as aforesaid, the hereinafter described real and personal property, amounting in value to about $3,000, ninety per cent. of the interest of which is to be applied for at least two annual memoirs or essays by different individuals, and, as the fund increases, as many more as the interest of the trust and revenue will in the judgment of the trustees justify, relative to some branch of medical science, to be read at the city of Washington at such time and place as the said parties of the second part and their successors as trustees may designate, under the name of "The Toner Lectures;" each of these memoirs or lectures to contain some new truth fully established by experiment or observation, and no such memoir or lecture to be given to the world under the name of "The Toner Lectures" without having first been critically examined and approved by competent persons selected by said trustees for that purpose.

It is further provided, that such of the said memoirs or lectures as may be approved shall be published in such manner and through such channels as said trustees may determine.

And, in order to carry out the intentions hereinbefore expressed, the said party of the first part hath associated with himself the said other parties of the second part, each in his official character as hereinbefore named, with this provision: that upon removal from official position of any one of said parties of the second part, by death or otherwise, his successor in said position shall succeed him as one of the trustees of "The Toner Lectures;" and that upon the death, resignation, or removal of said party of the first part, or his successors, the other trustees

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surviving shall, within a reasonable time thereafter, elect to succeed him an active and energetic member of the regular medical profession in good standing and practice in the city of Washington, who shall upon his acceptance thereof be and become one of the trustees of "The Toner Lectures." And if the Medical Society of the District of Columbia shall at any time hereafter be dissolved, so that there would no longer be a president thereof, then and within a reasonable time thereafter the other trustees shall elect to succeed the said president, as trustee in this behalf, an active and energetic member of the regular medical profession in this District, in good practice and standing, who shall upon acceptance thereof be and become one of the trustees of "The Toner Lectures;" and so on from time to time, so as to continue to have five trustees, who shall serve without compensation. And to carry out the hereinbefore-expressed intentions these presents are made.

Now, therefore, this indenture witnesseth that the said party of the first part, for and in consideration of the premises aforesaid, and, further, the sum of one dollar, lawful money of the United States, to him in hand paid by the said parties of the second part, at and before the sealing and delivery of these presents, the receipt whereof is hereby acknowledged, hath granted, bargained, sold, aliened, enfeoffed, and conveyed, and doth by these presents grant, bargain, sell, alien, enfeoff, and convey unto the said parties of the second part, the survivor or survivors of them, (and their associates duly elected,) and to their heirs, executors, administrators, and assigns, according to the quality of the estate granted, the following described real estate in the said city of Washington, known and described as being lots numbered six (6) and seven (7) in Clark's recorded subdivision of square north of square numbered three hundred and thirty-four, (334,) and also money and private securities amounting to the sum of $1,100; together with all the improvements, ways, easements, rights, privileges, and appurtenances to the said real estate belonging, or in any wise appertaining, and all the remainders, reversions, rents, issues, and profits thereof:

To have and to hold the said real and personal estate or private securities unto and to the use of the said parties of the second part, together with the said party of the first part, their heirs, executors, administrators, and assigns, in and upon the trusts, nevertheless, hereinafter mentioned and declared—that is, whenever it seems to them that the productiveness of the fund will be increased thereby, to sell the said real estate, and the same to convey in fee simple to the purchaser thereof; and to convert the said personal estate or private securities into money, and the proceeds of said sale and conversion to invest, re-invest, from time to time, and to keep invested in some safe public or private securities in the name and for the use of the trustees of "The Toner Lectures," who shall apply ninety per cent. of the interest thereof annually to defraying the expenses of said "Toner Lectures," and the publication thereof whenever the publication thereof is deemed advisable. The remaining

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ten per cent. of the said annual interest from the whole fund, as well as any additional gift or unexpended balance at the end of each year, they shall from time to time invest, and the same shall be and become a part of the principal, for the steady increase of the permanent and producing fund of said "Toner Lectures." It is hereby provided that the said trustees shall hold at least one regular meeting annually; keep a correct record, in a book for the purpose, of all proceedings and actions as trustees, with a statement of the expenditures of the revenue, and the condition of the fund, where and how invested; all of which they may, from time to time, at their pleasure make public, and be governed in all matters relating to the general execution of the trusts and intentions herein expressed and declared, and in the investing and disbursing of all trust-moneys, by such rules and regulations as may from time to time be adopted by them for their own government, with this express condition, however: that for the election of any new trustee to fill a vacancy, for the sale of any property or stocks or securities, or the investment of any funds, the approval of a majority of said trustees, in writing or by their votes at a meeting of the trustees, shall be absolutely necessary.

And it is further provided, that in case of the failure at any time of the purposes for which this trust is created, or in case of the failure of the trustees to act for three successive years, or in case of the total failure of the trustees to give effect to this trust, then, and in any such contingency, the fund hereby provided for and created shall revert to the said party of the first part and his heirs or personal representatives.

In testimony whereof, the said party of the first part hath hereunto set his hand and seal on the day and year first hereinbefore written.

J. M. TONER.

Signed, sealed and delivered before Edward Clark, justice of the peace, in the presence of—

S. H. KAUFFMAN,
G. B. GOFF.

We hereby accept the foregoing trust.

JOSEPH HENRY,
Secretary Smithsonian Institution.
J. K. BARNES,
Surgeon-General United States Army.
J. M. FOLTZ,
Surgeon-General United States Navy.
GRAFTON TYLER, *M. D.*,
President Medical Society of the District of Columbia.
JOSEPH MEREDITH TONER, *M. D.*

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E.

THE TYNDALL TRUST FOR THE PROMOTION OF SCIENCE IN THE UNITED STATES.

Letter from Professor Tyndall to Professor Henry.

NEW YORK, *February* 7, 1873.

MY DEAR PROFESSOR HENRY: I have made my "will" in due form, and signed it in the presence of witnesses.

My desire and intention in accepting the invitation of my friends were, as you know, to hand over the proceeds to Chicago. But the recovery from calamity is quick in this country, so that Chicago not only does not need my feeble aid, but would be willing of her abundance to add to my wealth.

My disbursements, as I told you, are heavy. Living I have found to be exceedingly expensive in the United States; hence the balance which I am able to hand over to the board of trustees is not so large as I could wish it to be. It, however, amounts to a little more than thirteen thousand dollars.

I have bestowed some care on the accounts, and do not think I carry home with me a single cent of American money. But I carry home what is to me incomparably more precious, and that is the assured goodwill of the American people.

The instruments that I take home with me I intend to present to the Royal Institution, where they will be turned to good account. My hands will be then entirely clean, and no foreign element will mingle with the bright memory of the time I spent here.

* * * * * * *

Ever yours, faithfully,

JOHN TYNDALL.

Professor JOSEPH HENRY,
Secretary Smithsonian Institution, Washington, D. C.

THE TRUST.

I, John Tyndall, professor of natural philosophy in the Royal Institution of Great Britain, having, at the solicitation of my friends, lectured in various cities of the United States, find the receipts and disbursements on account of these lectures to be as follows:

I.—*Receipts.*

From Boston, for six lectures	$1,500 00
From Philadelphia, for six lectures	3,000 00
From Baltimore, for three lectures	1,000 00

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From Washington, for six lectures	$2,000 00
From New York, for six lectures	8,500 00
From Brooklyn, for six lectures	6,100 00
From New Haven, for two lectures	1,000 00
Total receipts	23,100 00

II.—*Disbursements.*

Before leaving England: Wages of assistants during the preparation of the lectures; work of philosophical instrument maker; new apparatus; sundry items for outfit; traveling expenses of myself and two assistants from London to New York, make a total of £671 6*s.* 8*d.*, which, at the rate of $5.50 per pound, amounts to	$3,692 31
In the United States: Hotel and traveling expenses for myself and two assistants; other expenses incidental to lectures in Boston, Philadelphia,* Baltimore, Washington, New York, Brooklyn, and New Haven, covering a period of four months, plus traveling expenses of myself and my assistant from New York to London, make a total of	4,749 35
Present to Yale's Scientific Club	250 00
Salaries to assistants for four months, £250, which, at $5.50 per pound, amounts to	1,375 00
Making the total disbursements	10,066 66

III.

The total receipts are	$23,100 00
The total disbursements	10,066 66
Making the net proceeds of lectures	13,033 34

As an evidence of my good-will toward the people of the United States, I desire to devote this sum of thirteen thousand and thirty-three dollars to the advancement of theoretic science and the promotion of original research, especially in the department of physics, in the United States.

To accomplish this object I hereby appoint Professor Joseph Henry, Secretary of the Smithsonian Institution, Washington City, D. C., Dr. E. L. Youmans, of New York, and General Hector Tyndale, of Philadelphia, to act as a board of trustees to take charge of the above sum—to carefully invest it in permanent securities; and I further direct that the said board shall, for the present, appropriate the interest of the fund

*At Philadelphia I had no hotel expenses, but was most comfortably lodged at the house of my kinsman, General Hector Tyndale. He, I may add, paid his own hotel expenses wherever he accompanied me.

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in supporting, or in assisting to support, at such European universities as they may consider most desirable, two American pupils, who may evince decided talents in physics, and who may express a determination to devote their lives to this work. My desire would be that each pupil should spend four years at a German university—three of those years to be devoted to the acquisition of knowledge, and the fourth to original investigation.

If, however, in the progress of science in the United States, it should at any time appear to the said board that the end herein proposed would be better subserved by granting aid to students, or for some special researches in this country, the board is authorized to make the appropriations from the income of the fund for such purposes.

I further direct that vacancies which may occur in said board of trustees, by death or otherwise, shall be filled by the president of the National Academy of Sciences.

If in the course of any year the whole amount of the interest which accrues from the fund be not expended in the manner before mentioned, the surplus may be added to the principal, or may be expended in addition to the annual interest of another year.

If at any time any organization shall be established, and money provided by other persons for the promotion of such original research as I have in view, I authorize the said board of trustees to exercise their discretion as to co operating in such work from the income of this fund.

In witness whereof I have hereunto set my hand and seal this 7th of February, 1873, in the city of New York.

JOHN TYNDALL. [SEAL.]

In presence of—

C. BURRITT WAITE.

L. E. FULLER.

F.

BEQUEST OF JAMES HAMILTON.

Letter from the executors.

CARLISLE, PENNSYLVANIA, *April* 17, 1873.

DEAR SIR: Inclosed please find printed copy of the last will and testament, and codicil thereto, of James Hamilton, esq., late of this place, deceased, by which we notify you of the bequest made to your board by said last will and testament.

As certain legal questions will have to be decided by the courts before we will feel justified in paying over eleemosynary bequests, it would be well for your board to be represented by counsel.

One of the religious associations have employed Henderson and Hays, who, we understand, are making preparations for a case.

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We give you early notice that you may act accordingly, and all legal difficulties be removed at as early a day as practicable.

Our post-office address is Carlisle, Pennsylvania.

Yours, respectfully,

JOSEPH H. STUART,
ABRAM BOSLER,
Executors of James Hamilton, deceased.

Professor JOSEPH HENRY,
Secretary of the Smithsonian Institution.

Extract from the will of James Hamilton, dated November 20, 1871.

"In the name of God, amen. I, James Hamilton, declare this to be my last will and testament, with respect to my personal property:

* * * * * * *

8. I give one thousand dollars to the Board of Regents of the Smithsonian Institution, located at Washington, D. C., to be invested by said regents in some safe fund, and the interest to be appropriated biennially by the secretaries, either in money or a medal, for such contribution, paper, or lecture on any scientific or useful subject as said secretaries may approve."

G.

CIRCULAR SENT WITH SPECIMENS PRESENTED TO INSTITUTIONS.

The following is a copy of the circular sent to foreign museums on the presentation to them of specimens from the collections of the institution; which was alluded to by the secretary in his remarks at the meeting of the Board on the 20th January, 1873:

SMITHSONIAN INSTITUTION,
Washington, D. C., ———, 187–.

DEAR SIR: In behalf of the Smithsonian Institution, we have this day forwarded by ——— the specimens mentioned in the accompanying receipt—a present from the Institution, upon the following conditions:

1. That an acknowledgment be made to the Secretary of the Institution immediately on receipt of the specimens, by signing and returning the accompanying blank.

2. That full credit be given the Institution for the donation, on the labels of the specimens, in published reports, and under all other circumstances.

3. That free access to and use of these specimens be allowed, under the proper restrictions, to all persons engaged in original investigations requiring such material.

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4. That suitable returns be made from the duplicates in the collections under your charge, whenever the Institution may desire and call for them.

Very respectfully, your obedient servant,

JOSEPH HENRY,
Secretary S. I.

[To be signed and returned prepaid to the "Secretary of the Smithsonian Institution, Washington."]

———, ———, 187–.

I have received from the Smithsonian Institution, through ——— ———, in behalf of ——— ———, the following collections, subject to the conditions mentioned in the accompanying circular-letter.

——— ———.

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JOURNAL OF PROCEEDINGS

OF

THE BOARD OF REGENTS

OF THE

SMITHSONIAN INSTITUTION.*

WASHINGTON, *December* 19, 1873.

A special meeting of the Board of Regents was held at 7 p. m. at the institution. Present, Mr. Justice Nathan Clifford, acting Chief Justice of the United States, Hon. H. Hamlin, Hon. J. A. Garfield, Hon. L. P. Poland, Hon. Peter Parker, General Sherman, and the Secretary, Professor Henry.

The Secretary stated that the meeting had been called for the purpose of electing a chancellor in place of Chief Justice Chase, who had deceased, and that this was a case of emergency, as the semi-annual interest, due on the first of next month, necessary to carry on the operations of the Institution, could only be drawn according to law on the requisition of the chancellor and secretary of the Institution.

On motion of General Garfield, Mr. Justice Nathan Clifford was elected chancellor.

The Secretary announced that since the last meeting of the board two of its most prominent and valuable members had deceased, Chief Justice Chase and Professor Agassiz.

On motion of Mr. Hamlin, a committee was appointed to prepare resolutions expressing the sentiments of the board in regard to the death of Mr. Chase and Professor Agassiz.

The chancellor appointed Messrs. Hamlin, Sherman, Parker, and the Secretary as the committee.

General Garfield made the following remarks:

Mr. CHANCELLOR: I rise to second the motion for the appointment of a committee to draught resolutions in reference to the death of our distinguished brother regents Chief Justice Chase and Professor Agassiz.

Never before in a single year has the Board of Regents suffered so severe a loss. It would be difficult to find, in any organization, two men more eminent, and representing a wider range of culture, than the two regents who have fallen since the last meeting of this board.

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This is not the occasion to speak at length on the subject; but as my term of service will expire before the next meeting, I ask the indulgence of the board while I refer briefly to some of the marked characteristics of our late distinguished associates.

Few Americans have filled so many high places of trust and honor as Salmon P. Chase; and few have brought to the discharge of the duties of their high station such masterly ability and such rare and varied accomplishments. His career adds another to the many illustrations of the truth, that he who loses his life for the truth's sake shall find it.

In his early manhood, following his own conviction of duty, he committed himself, without reserve, to a cause which seemed, at the time, to shut him out from all hope of public preferment. He stood by his convictions, and lived, not only to see his doctrines prevail, but to be one of the honored leaders in the cause he had espoused.

Whether at the bar, in the practice of his profession; in the executive chair of his own State; in the National Senate; as the great finance minister of the republic in the stormy days of war; or as Chief-Justice of the United States, there ran through his whole life a depth of conviction, a clearness of comprehension, and a force of utterance that made his power felt, and marked him as a man who filled and overfilled, honored and adorned, the great stations to which he was called. If, in the course of his high career, he felt the promptings of that ambition which has been called "the last infirmity of noble minds," it must be acknowledged that he aspired to no place beyond his capacity to honor.

Throughout his long and honored life the cares and demands of public place did not diminish his ardent love for the pursuits of science and the keen enjoyment of literature and art. The great masters of song were his daily companions. I was his guest for many weeks, during the stormy and troublous winter of 1862–'63, when to the deep anxieties of the war were added the gravest financial problems that have ever confronted an American Secretary of the Treasury. And many a time, at the close of a weary day of anxious care and exhausting labor, I have seen him lay aside the heavy load, and, in the quiet of his study, read aloud, or repeat from memory, the rich verse of Tennyson, or of some other great master of song.

It was this life of art and sentiment, within the stormy life of public duty, that fed and refreshed his spirit, and kept his heart young, while his outer life grew venerable with years and honors.

As the Chancellor of this Institution, we saw in happy and harmonious action his ample knowledge of our institutions, his wide experience of finance, his reverential love for science and art, and his unshaken faith in the future of his country as the grand theater for the highest development of all that is best and greatest in human nature. No contribution to science offered to this board escaped his attention. Nothing that was high or worthy in human pursuits failed to elicit his appreciative and powerful support.

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In Professor Agassiz we have lost a man of kindred powers, whose life was spent in a different though hardly less conspicuous field of action.

Few lives were ever so sincerely and entirely devoted to the highest and best aims of science. I was led to appreciate this by a remark which Professor Agassiz made to me several years ago, which is, I believe, the key to his own career, and deserves to be remembered by all who would follow in his footsteps. His remark was that he had *made it the rule of his life to abandon any intellectual pursuit the moment it became commercially valuable.*

He knew that others would utilize what he discovered; that when he brought down the great truths of science to the level of commercial values, a thousand hands would be ready to take them and make them valuable in the markets of the world. Since then I have thought of him as one of that small but elect company of men who dwell on the upper heights, above the plane of commercial values, and who love and seek truth for its own sake. Such men are indeed the prophets, the priests, the interpreters of nature. Few of their number have learned more, at first hands, than Professor Agassiz; and few, if any, have submitted their theories to severer tests.

It was a great risk for the astronomer to announce that the perturbations of the solar system could only be accounted for by a planet as yet unknown, and to predict its size and place in the solar system, trusting to the telescope to confirm or explode his theory. But perhaps Professor Agassiz took even a greater risk than this. Who does not remember the letter he addressed to Professor Peirce, of the Coast Survey, just before he set out on the Hassler expedition, predicting in detail what evidences of glacial action he expected to find on the continent of South America, and what species of marine animals he expected to discover in the deep-sea soundings along that coast? He risked his own reputation as a scientific man on the predictions then committed to writing.

What member of this board will forget the lecture he delivered here after his return, detailing the discoveries he had made, and showing how completely his predictions had been verified?

While he was the prince of scholars, and a recognized teacher of mankind, yet he always preserved that childlike spirit which made him the most amiable of men. He studied nature with a reverence born of his undoubting faith. He believed that the universe was a cosmos, not a chaos; and that throughout all its vast domains there were indubitable evidences of creative power and supreme wisdom.

We have special cause for regret that his early death has deprived this community and the world of a series of lectures which were to have been delivered here this winter, on subjects of the deepest interest to science. His death will be deplored in whatever quarter of the globe

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genius is admired and science is cherished. He has left behind him as a legacy to mankind a name and a fame which will abide as an everlasting possession.

The Secretary stated that prior to February 22, 1867, the money received from the United States, as semi-annual interest on the bequest of Smithson, was deposited with the bankers Corcoran & Riggs, and subsequently with Riggs & Co., but on that date the regents had adopted a resolution directing that all money received by the Institution "be deposited in a national bank, which is also an authorized Government depository," (Report for 1866, page 78.) In accordance with this instruction and the direction of the chancellor, Chief Justice Chase, the income was deposited in the First National Bank of Washington. Unfortunately, on the 19th of September, 1873, that bank suspended payment, having $8,224.87 to the credit of the Institution. Since that time, however, a dividend of 30 per cent. ($2,467.46) has been received on this balance, leaving $5,757.41 still due the Institution.

On motion of General Garfield, it was

Resolved, That the Secretary of the Institution make arrangements, if possible, with the Secretary of the Treasury to deposit the income hereafter received in the United States Treasury, to be drawn out on checks signed by Professor Henry; and that if this course could not be adopted, that Congress be requested to pass a law to this effect.

The board then adjourned *sine die*.

WASHINGTON, *January*, 21, 1874.

In accordance with a resolution of the Board of Regents of the Smithsonian Institution, fixing the time of the beginning of their annual meeting on the third Wednesday in January of each year, the board met to-day at 7 o'clock p. m. Present: Mr. Associate Justice Clifford, chancellor, Hon. H. Hamlin, Hon. J. W. Stevenson, Hon. A. A. Sargent, Hon. S. S. Cox, Rev. Dr. Maclean, Hon. Peter Parker, General Sherman, Governor Shepherd, Prof. H. Coppée, and Professor Henry, Secretary.

The minutes of the last meeting were read and approved.

The Secretary announced the following appointments as regents:

By joint resolution of Congress (approved January 19, 1874) Prof. Asa Gray, of Harvard College, Cambridge, Massachusetts, vice Prof. L. Agassiz, deceased; Prof. J. D. Dana, of Yale College, New Haven, Conn., vice Professor Woolsey, declined re-election; Prof. Henry Coppée, of Lehigh University, Bethlehem, Pa., vice William B. Astor, declined re-election; Rev. Dr. John Maclean, of Princeton, N. J., and Hon. Peter Parker, of Washington, D. C., re-elected for the term of six years.

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By the President of the Senate Hon. A. A. Sargent, of California, as regent for the term of his service as Senator, (1879,) vice Mr. Trumbull.

By the Speaker of the House, Hon. S. S. Cox, of New York, re-appointed, and Hon. E. Rockwood Hoar, of Massachusetts, vice Hon. J. A. Garfield, and Hon. G. W. Hazelton, of Wisconsin, vice Hon. L. P. Poland; for two years from the fourth Wednesday of December, 1873.

Mr. Hamlin, from the special committee appointed at the last meeting, reported the following resolutions:

Resolved, That in the death of Chief Justice Chase, the Smithsonian Institution has lost a wise counsellor, an efficient friend, and a zealous advocate of its policy and operations.

Resolved, That in his death, the country has lost an elevated statesman, a wise, a just, and an upright judge.

Resolved, That the cause of civil liberty, of pure Christianity, and the advance of higher civilization have lost in the death of Chief Justice Chase the co-operation of one of the most prominent and influential minds of the day.

Resolved, That a copy of these resolutions be transmitted to the family of the deceased.

Mr. Hamlin made the following remarks:

I did not expect to utter a word on this occasion. I have, however, at the solicitation of the Secretary, been induced to make some brie remarks upon the subject of the resolutions reported by the committee. I first met Mr. Chase at the time when he entered upon his official duties as a Senator of the United States, and from that time to the close of his life I knew him well and intimately. This Institution has lost an earnest, able, and devoted friend, and that we shall miss him in our counsels we well know, much better than the world, for we always found him at the post of duty, uniting with a broad and capacious intellect, good, common, practical sense, and always ready to counsel well and wisely. We shall miss him here. In the counsels of the nation he did his duty well and nobly. He had what at the time were called his peculiar opinions, and he avowed and maintained them at a time when it required moral courage to do so; but, however others disagreed with him, none would say that he did not advocate his views with courtesy and eminent ability. In the heat of debate he might sometimes make a quick retort, but his bearing was always that of a gentleman, and his position that of an elevated statesman. On these occasions he did what he believed would subserve the best interests of man and elevate him to a higher and nobler civilization. As an executive officer during the war, he administered the Treasury Department with great ability, and his name and fame will be connected with those times in the history of the country. To him, more than any other man, are we indebted for the means by which the

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life of the nation was saved. I knew less personally of him in judicial life, but I think it is known and well understood through all the land that he wore the judicial ermine with honor and untarnished; that he commanded the respect due to his judicial and legal learning, and that his decisions comported well with those of the eminent men who had occupied the same exalted position, and was a worthy successor of those who preceded him.

On motion of General Sherman, the resolutions were unanimously adopted.

Mr. Hamlin, from the same committee, also reported the following resolutions:

Resolved, That the Board of Regents of the Smithsonian Institution record on the minutes of their proceedings their high appreciation of the character and labors of their lamented associate, Louis Agassiz, and the expression of their profound sorrow on account of his unexpected death, in the full exercise of his power, and amidst his unparalleled usefulness.

Resolved, That Professor Agassiz, by the attraction which he exerted on all who came under the magical influence of his genial temperament and generous sympathies, nobly advocated the claims of science to high popular estimation, private endowments, and liberal public patronage.

Resolved, That as an instructor in his adopted country, he introduced methods of study and directed attention to fields of research in natural history far more elevated than those which had been previously in use; that as an original investigator he made additions to human knowledge which do honor to the science of the nineteenth century, and associate his name with those of the prominent benefactors of his race.

Resolved, That in the death of Professor Agassiz, the Smithsonian Institution has lost a wise adviser in its scientific operations, a powerful supporter of its policy in regard to original research, and an influential friend, ready at all times to advocate its claims on Congress for the independent support of a national museum.

Resolved, That the Board of Regents deeply sympathize with the family of the deceased, on account of their sad bereavement, and that a copy of these resolutions be transmitted to them.

Dr. Parker spoke as follows:

Mr. CHANCELLOR: It may seem presumptuous in me to rise to move the adoption of the resolutions submitted.

To calculate the distance and magnitude of the sun, requires an astronomer, and to analyze its chemical properties is the province of the spectroscopist, but multitudes who are neither astronomers nor spectroscopists can delight in the revelations which are made in regard to that luminary.

I am not a scientist; still, I can appreciate, in some degree, the labors of one who shone *a star of the first magnitude* in the firmament of science!

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It is sixteen years since I first met Professor Agassiz, whose death the Board of Regents so deeply lament. It was at commencement at Harvard University, in 1858, the first year after my return from a long residence in China. The Emperor Napoleon had made tempting offers in the way of high position to Professor Agassiz to go to Paris. In tense solicitude on the part of his friends in Cambridge and the country generally, was felt as to his decision. It was on this occasion that their anxious suspense was relieved, as Professor Agassiz, after dinner, rose and announced his determination henceforth to be an American citizen. This declaration was received with most enthusiastic demonstrations of rejoicing.

I am happy the resolutions now submitted recognize his adopted citizenship. An incident that has come to my knowledge within the last hour has given me great pleasure, as illustrating the patriotism of the man. A mutual friend said, "Professor Agassiz, it fills me with gratitude every time I think of your declining the very flattering proposition that was made to you from the court of France." To which he replied: "Yes, and do you know that proposition was renewed to me after the war began, and I replied with *more earnestness* than before, if I loved my adopted country too much to leave it when all was peace, I certainly shall not leave it now, when a shadow has come over its prospects."

In the resolutions adopted by different scientific and literary institutions throughout the country, much prominence is given, and rightly, too, to the irreparable loss sustained by the decease of this pre-eminent man of science.

While we sympathize most fully with that sentiment, there is another consideration that should not be overlooked. I refer to the kind Providence that has given to the world such a man, preserved his life to mature years, and enabled him to accomplish so much as he has done for the science, not only of the day and of this country, but of the age and world.

To Louis Agassiz belongs the distinction of having awakened, in a remarkable degree, a spirit of scientific inquiry, and of having discovered changes our planet has undergone, through the influence of laws he was the first to demonstrate, arriving at such a knowledge of their operations that it may be truly said of him that the remote consequences of these laws, *first predicted by his theory, were, in repeated instances, most signally verified upon two continents by his observations.*

In the circumstances of his departure from this life, there were peculiar mercies that call for grateful recognition. Fears were at one time entertained, and not without cause, lest he might linger through years of suffering, deprived of reason; but he and his loving family have been spared that affliction, and he has been, as it were, translated, to resume, or rather to continue, on a higher plane, his advance in the knowledge of the works of the Creator, with devout and endlessly increasing adoration of their Divine Author.

On motion of Dr. Parker, the resolutions were unanimously adopted.

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The Secretary presented a general statement of the condition of the fund, and the receipts and expenditures for the year 1873, which was referred to the executive committee.

The Secretary called attention to the liberality of Mr. George W. Riggs, the banker, who, after the suspension of the First National Bank, in September last, had advanced the funds necessary to carry on the operations of the Institution, amounting to upward of $10,000, on which he had declined to charge any interest.

On motion of Mr. Hamlin, it was

Resolved, That the cordial thanks of the Board of Regents be tendered to Mr. Riggs, for his generosity in his financial services to the Institution.

The Secretary stated that, in accordance with the resolution of the Board, he had applied to the Treasury Department to take charge of the Smithsonian funds for current operations, and that arrangements had been made with General Spinner, United States Treasurer, to receive deposits from the Institution, and make payments on checks of the Secretary, in the same manner as had been done in the First National Bank.

The Institution is indebted to General Spinner for his prompt acquiescence in the proposition, and his authority for carrying it out in all the details necessary to facilitate its operation.

The Secretary gave an account of the history and operations of the Institution, particularly for the information of the new members of the board.

The board adjourned at 9 p. m., to meet on Monday, 26th January, at 7 o'clock p. m.

JANUARY 26, 1874.

A meeting of the Board of Regents was held this day at 7 o'clock p. m. Present Mr. Justice Clifford, chancellor of the Institution, Hon. H. Hamlin, Hon. J. W. Stevenson, Hon. A. A. Sargent, Hon. E. R. Hoar, Hon. G. W. Hazelton, Hon. P. Parker and the Secretary, Professor Henry.

The minutes of the last meeting were approved.

Dr. Parker presented the annual report of the executive committee, which was read and, on motion of Mr. Stevenson, adopted.

The Secretary called attention to the bequest of James Hamilton, and presented the following letter from one of the executors:

CARLISLE, PA., *January* 23, 1874.

DEAR SIR: Yours of 20th instant received and contents noted. The executors will be ready to pay over the legacy (bequeathed by Mr.

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Hamilton) to the Smithsonian Institution about the first week in February. Please inform us who is authorized by the Board of Regents of the Smithsonian Institution to receive the legacy and release the executors, and we will send the release next week to you to be executed by the proper officers of said board, and one of the executors or a representative will be in Washington in the early part of next month to pay over the money and get the release.

Yours, respectfully,

JOSEPH A. STUART,

One of the executors of Jas. Hamilton, deceased.

Prof. JOSEPH HENRY.

N. B.—Below you will notice a copy of the section of the will containing said legacy to the Institution.

SECTION 8. "I give one thousand dollars to the Board of Regents of the Smithsonian Institution, located at Washington, D. C., to be invested by said regents in some safe fund, and the interest to be appropriated biennially by the secretaries, either in money or a medal, for such contribution, paper, or lecture, on any scientific or useful subject, as said secretaries may approve."

On motion of Mr. Hamlin, it was

Resolved, That the bequest of the late James Hamilton, of Carlisle, Pa., be accepted; that the chancellor and Secretary of the Institution be authorized to receipt for the money and that it be deposited with the Secretary of the Treasury, on the same terms as the original bequest of Smithson, in accordance with the act of Congress approved 8th February, 1867.*

The Secretary gave an account of the correspondence of the Institution and spoke of the immense mental activity which existed in this country in regard to scientific speculations. In connection with these remarks he laid before the Board, at the request of the author, a series of manuscripts entitled "Disclosures in Science, etc," by Henry Korner, of Powhatan, Ohio, which had been urged upon the Institution for publication. In these manuscripts the author states that he has demonstrated the insufficiency of the theory of gravitation, as propounded by Newton, to explain the mechanical phenomena of astronomy, and also the inadequacy of the received principles of molecular action to account for the phenomena of physics and chemistry, and that he has himself discovered principles to which all these may be referred.

The Secretary stated that after examining these manuscripts he had informed the author that they could not be published by the Institution, since nothing could be accepted for that purpose unless it had previously been submitted to a commission for critical examination, and a favorable report had been obtained; that these speculations were

*Statues at Large, vol. 14, page 391.

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either so far in advance of the received scientific principles of the day or so far behind them that the two were out of all harmony with each other; that it would be impossible to obtain a favorable report in regard to them from any commission composed of men of scientific reputation; that he would, however, suggest that the manuscripts be deposited in the archives of the Institution, free of access to any who might wish to consult them with the proviso that no extracts be taken from them without full credit being given to the name of the author. This suggestion was favorably received by the author.

On motion of Mr. Stevenson, it was

Resolved, That the action of the Secretary in relation to the Korner manuscripts be approved.

The Secretary stated that, in accordance with the policy of the Institution to enter into harmonious relations with other establishments in this city, as had already been done by depositing the plants and insects in the Department of Agriculture, the skulls in the Army Medical Museum, &c., he desired to enter into friendly relations with the Corcoran Art-Gallery, of which he had recently been elected a trustee. He thought that, inasmuch as this gallery had been opened to the public, and had been established with a permanent endowment, larger even than that of the Smithsonian Institution, it was proper that some of the articles of art now in the building should be deposited in the Corcoran Gallery, subject, of course, to the order of the regents.

On motion of Mr. Hamlin, it was

Resolved, That the Secretary be authorized to deposit in the Corcoran Art-Gallery, to be reclaimed at any time, such works of art belonging to the Institution as may be approved by the executive committee.

The Secretary presented his annual report of the operations of the Institution for the year 1873, which was read; and

On motion of Mr. Hazelton,

Resolved, That the report of the Secretary be accepted and transmitted to Congress as usual.

The Secretary stated that during the past year Mr. P. T. Barnum had presented the National Museum with the following valuable specimens of natural history, viz: A Malayan tapir, a Bactrian camel, a dromedary, an African panther, a Florida manatee, an Indian rhinoceros, a mandrill, and others, furnishing the means of preparing both their skeletons and mounted skins. He had also promised to give the Institution the bodies of all the animals that die in his menagerie.

On motion of Dr. Parker, it was

Resolved, That the thanks of the Board of Regents be tendered to P. T. Barnum, esquire, for his liberal donation of the bodies of animals to the National Museum, which form a very important addition to the collection of specimens necessary to illustrate the science of zoology.

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Dr. Parker stated that prior to 1873 all accounts for the museum had been paid in the first instance by the Institution and audited with the Smithsonian vouchers by the executive committee. Last year, however, an arrangement had been made by which bills for the National Museum, after approval by Professor Henry, were presented to the disbursing agent of the Department of the Interior, who paid the parties directly. The accounts were audited by the disbursing officer of the Interior Department, and afterward by the Treasury Department. Inasmuch as the regents of the Institution, however, are responsible for all expenditures connected with its operations, he would ask the opinion of the board as to the propriety of examining all the vouchers for payments made for the National Museum from the Government appropriations. Professor Henry had retained a duplicate set of vouchers for these payments, and had the books carefully kept, and had offered them to the committee for examination.

On motion of Mr. Hoar, it was

Resolved, That the board approve of the examination by the executive committee of the vouchers for the expenditures of the National Museum, as requested by the committee and desired by the Secretary.

The Secretary stated that the system of international literary and scientific exchanges had now become so extensive that he feared the cost would be too great for the means of the Institution, and it had been suggested that the larger societies and establishments which received so much benefit from the system might contribute something annually for its support. After some discussion,

On motion of Mr. Hamlin, it was

Resolved, That the Secretary be authorized to receive aid from societies and individuals in defraying the heavy expense of the exchange system.

The board then adjourned to meet at the call of the Secretary.

APRIL 27, 1874.

A meeting of Board of Regents was held at 10 o'clock a. m.

Present: The Chief Justice of the United States, Hon. M. R. Waite, Hon. Peter Parker, Hon. E. R. Hoar, Hon. G. W. Hazelton, Professor Asa Gray, and the Secretary, Professor Henry.

The minutes of the last meeting were read and approved.

The Secretary stated that the object of the meeting was the election of a chancellor.

On motion of Mr. Hoar, Chief Justice Waite was unanimously elected chancellor.

Dr. Parker, from the executive committee, presented a report on the examination of the accounts of the National Museum for 1873, and a

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tatement relative to the accounts of the Institution and of the National Iuseum for the first quarter of 1874; which were accepted.

The Secretary stated that, on the 24th of February, 1874, Mr. Joseph L. Stuart, one of the executors of the estate of the late James Hamilton, of Carlisle, Pennsylvania, had paid the legacy of said Hamilton, iz, one thousand dollars, into the Treasury of the United States, in accordance with the resolution of the Board of Regents adopted January 6, 1874.

The following is a copy of the receipt:

[o. 10,564.] TREASURY OF THE UNITED STATES,
Washington, D. C., February 24, 1874.

I certify that Prof. Joseph Henry, Secretary of the Smithsonian Institution, has this day deposited to the credit of the United States one housand dollars, on account of amount received by bequest of the late ames Hamilton, of Carlisle, Pennsylvania, accepted by the Board of legents by resolution of January 26, 1874, providing that the amount e deposited with the Secretary of the Treasury on same terms as the riginal bequest of Smithson, in accordance with act of February 8, 867,* for which I have signed duplicate receipts.

$1,000. L. R. TUTTLE,
Assistant Treasurer United States.

The Secretary gave an account of the operations of the Institution; nd after inspecting the building, the board adjourned *sine die.*

* Statutes at Large, vol. 14, page 391.

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JOURNAL OF PROCEEDINGS OF THE BOARD OF REGENTS OF THE SMITHSONIAN INSTITUTION.

WASHINGTON, D. C., *January* 20, 1875.

In accordance with a resolution of the Board of Regents, fixing the third Wednesday of January as the time for the commencement of the annual session, a meeting of the Board of Regents was held on Wednesday, 20th of January, 1875, at 7 o'clock p. m., at the Smithsonian Institution.

Present, the Chancellor, Chief-Justice Waite; Hon. Henry Wilson, Vice-President of the United States; Senators H. Hamlin and A. A. Sargent; Representive Hon. E. R. Hoar; Hon. Peter Parker, Prof. Asa Gray, L. L. D., Prof. H. Coppée, L. L. D., Hon. George Bancroft, and Professor Henry, the Secretary.

The minutes of the last meeting were read and approved.

Excuses for non-attendance were received from Prof. Dana, Doctor Maclean, Hon. Mr. Stevenson, and Hon. Mr. Cox.

The Secretary presented the following letter from General Sherman, which was read:

HEADQUARTERS ARMY OF THE UNITED STATES,
Saint Louis, Mo., November 12, 1874.

MY DEAR PROFESSOR: Having removed my headquarters and residence from Washington to Saint Louis, it is proper that I should resign the post I have held for a few years as a Regent of your most honored Institution. I beg, therefore, that you will construe this letter as a tender of my resignation to the Board of Regents, or to such official as can accept the same.

In thus severing my official connection with the Smithsonian, I beg leave to express to you and your associates my sense of the noble task in which you are engaged, and of my earnest prayer that the Institution under your management will continue to fulfil its magnificent design.

A knowledge of science, that is of the laws of nature, is so intimately connected with the advance of higher civilization, that Mr. Smithson displayed unusual wisdom in so endowing his institution that it should give its principal labor to the increase of knowledge, to accumulating and securing new knowledge to be added to the old, which should be a special province of the universities of the whole earth. I therefore coincide with you perfectly in your special construction of the will, and hope that the Regents will continue to construe it literally, as a legacy sacred in its nature and beneficial in the highest degree.

I beg you will assure your associates that among the many causes of

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regret at leaving Washington, none impresses me more than that which forces me to sever my relations with the Regents of the Smithsonian Institution.

With great respect, your friend and servant,

W. T. SHERMAN,
General.

Prof. JOSEPH HENRY,
Smithsonian Institution, Washington, D. C.

On motion of Dr. Parker, it was

Resolved, That the Secretary of the Institution acknowledge the receipt of the letter from General Sherman, and express to him the high appreciation of the members of the board of his services as a Regent, and their regret at the termination of his official connection with the Institution.

The Secretary stated that Congress had passed a joint resolution electing Hon. George Bancroft, who had recently become a permanent resident of Washington, as Regent to fill the vacancy occasioned by the resignation of General Sherman.

On motion of Mr. Wilson, it was

Resolved, That the vacancy in the EXECUTIVE COMMITTEE, occasioned by the resignation of General Sherman, be filled by the appointment of Hon. GEORGE BANCROFT.

The Secretary presented his annual report of the operations and condition of the Institution, which was read in part. He also presented exhibits of the finances, which were referred to the Executive Committee.

The Secretary stated that the annual accounts had been made up to the 15th of January, the date at which the semi-annual interest was received from the Treasury Department.

Dr. Parker, from the Executive Committee, presented a preliminary report on the condition of the Smithson fund, and the receipts and expenditures for the past year, and stated that all the vouchers for payments had been carefully examined by the committee, who would submit a full report at the next meeting.

The Secretary explained several features of the appropriations and expenditures of the year, the deposits made with the Corcoran Art Gallery, Army Museum, Department of Agriculture, &c.

A statement of the circumstances attending a theft of $154.50 from the office of the Secretary of the Institution, was made by Prof. Henry, and, on motion of Mr. Sargent, it was

Resolved, That the amount of the loss ($154.50) be charged in the account to "incidental expenses."

The reading of the report of the Secretary was then resumed.

At the suggestion of the Secretary, it was

Resolved, That a committee, consisting of Professors Gray and

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Coppée, be appointed to examine and report on the present condition of the *museum*, especially the ethnological department.

The board then adjourned to meet on Saturday evening, January 23, at 7 o'clock.

WASHINGTON, *January* 23, 1875.

A meeting of the Board of Regents was held this day, at 7 o'clock p. m.

Present, the Chancellor, Chief-Justice Waite, Senators H. Hamlin, J. W. Stevenson, and A. A. Sargent; Representatives S. S. Cox, E. R. Hoar, G. W. Hazelton; Hon. Peter Parker, Prof. Asa Gray, Prof. H. Coppée, Hon. George Bancroft, and the Secretary, Professor Henry.

The minutes of the last meeting were approved.

Dr. Parker presented the annual report of the Executive Committee, which was read and, on motion of Mr. Hamlin, adopted.

Dr. Gray, from the special committee to examine the museum, presented the following report, which, on motion of Mr. Sargent, was accepted and ordered to be printed in the proceedings of the board:

REPORT OF SPECIAL COMMITTEE ON THE MUSEUM.

Your committee appointed to examine the museum has devoted as much time to the examination as the members of it could secure during the past two or three days, and would respectfully offer a few remarks upon its condition. It is not supposed that any full or detailed report is expected. We will confine our observations to the ethnological museum, the only one we have found time to inspect with any care.

At the previous session of the board, about nine months ago, the large upper hall had barely been made ready to receive the ethnological and archæological collections, and a portion of the wall-cases only were in place. The progress that has been made in the interval is very gratifying. The hall, although not filled, has been well supplied with glazed cases, for the most part excellent in plan and construction; and the very large and varied collection of objects is arranged in them and displayed to public view. There is still much to be done in perfecting the the arrangement and the labeling, and there are recent accessions to be added. But even now, it is a great pleasure to see how well cared for and how important this museum is, and how much it interests a numerous throng of visitors. In this respect it seems likely to be even more attractive than the museum of natural history underneath. It is only when an ethnological collection is brought together upon a comprehensive scale, and is well arranged upon some intelligible principle, that any one realizes its interest and importance.

The arrangement which is, as we may say, technological rather than geographical, appears to be the one best adapted for such a museum—most useful to the serious student as well as most instructive and curious to the general visitor. Objects of the same class or subservient

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to the same purpose are brought together from whatever country, and of whatever age. Articles of dress, ornament, or food, implements for their preparation, utensils for domestic use, nets, weapons, and the like thus illustrate each other.

Among the special collections, newly put together, we were much interested in the very full one of the food, especially the vegetable food of the different tribes of the North American Indians; in the collection of their cradles or analogous appliances for the care of infants; in the collection of musical instruments, or what was intended to answer the purpose of music; and in the fine pottery of the Arizonian and other tribes.

The museum is especially rich in stone implements of the North American continent, mainly prehistoric; also in specimens of the survival of the art of working stone weapons of the finest kind, in some of our native tribes.

In the further development of the museum it may be thought best to arrange the archæological specimens in a separate series, but, as to America, it is not easy to draw a line between what is prehistoric, and what belongs essentially to the present era.

A great number of duplicates will soon be ready for exchange. Besides proper duplicates, freely available for exchange, there is, wherever the materials and the subject admit of it, a selected series carefully packed away in the lower part of the cases, or directly underneath the typical specimens or specimens selected for exhibition. For public inspection in very large museums it is now a recognized principle that the half is better than the whole; that typical specimens, those that best exemplify the leading forms or plans, should be exhibited in preference to full series of gradations and modifications. But the serious investigator needs all the forms, and this selected students' series, which is mostly out of sight, is carefully preserved for, and is accessible to, his use.

A great deal of important ethnological matter has of late years been collected in the form of photographs, and it seems obviously important that such collections should be systematically made and preserved, is not on the large scale, yet in the compact and effective form of stereoscopic views. If the figures, the costumes, and the dwellings of our various tribes still remaining are not perpetuated in this way very promptly, much which is now easy to preserve will be irretrievably lost to the future.

In this connection we would suggest that it might be well to provide a series of figures characteristic of the races of men, and especially of the North American races and tribes. This would require considerable room for exhibition and a great deal of judgment as to the mode of getting up the material to be employed, and the extent to which this kind of illustration should be introduced.

This museum is very rapidly increasing, and it is remarkable that the

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accessions are made almost without pecuniary cost. Hardly any have been purchased. They came from scientific or curious explorers, whom the Smithsonian Institution is everywhere exciting and furthering, and from Government expeditions commissioned mainly for other important objects; and the facilities in the way of transportation controlled by the Institution are such that even the cost of their delivery in Washington is trifling.

It will be interesting to know to what extent the museums which the Smithsonian Institution has in charge are visited by the public. The committee would suggest the use of a recording turnstile at the entrance, by which the number of visitors might be indicated and preserved with very little trouble.

Respectfully submitted.

ASA GRAY.
HENRY COPPÉE.

Doctor Parker, in behalf of the Executive Committee, stated that the heating-apparatus now employed was found insufficient in extremely cold weather to warm the building, particularly the new ethnological hall, and suggested the propriety of asking Congress to appropriate $2,500 to increase the means for heating the building.

Mr. Bancroft remarked that this was not asking anything for the benefit of the Smithsonian Institution, but for the comfort of the people of the United States who come here to see the great collections of the Government, and who should certainly be provided with the means of doing this without the danger of taking cold.

On motion of Mr. Bancroft it was—

Resolved, That Congress be requested to make an appropriation of $2,500 to increase the heating capacity of the apparatus used to warm the rooms occupied by the Government collections.

The reading of the report of the Secretary was then continued.

On motion of Mr. Cox, it was—

Resolved, That the report of the Secretary be accepted and transmitted to Congress as usual.

The board then adjourned *sine die*.

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JOURNAL OF PROCEEDINGS OF THE BOARD OF REGENTS OF THE SMITHSONIAN INSTITUTION.

WASHINGTON, D. C., *January* 19, 1876.

In accordance with a resolution of the Board of Regents of the Smithsonian Institution, fixing the time of the beginning of their annual meeting on the third Wednesday in January of each year, the Board met to-day, at 7 o'clock p. m.

Present, Chief-Justice Waite, Chancellor of the Institution; Hon. T. W. Ferry, acting Vice-President of the United States; Hon. J. W. Stevenson, Hon. A. A. Sargent, Hon. H. Clymer, Hon. B. H. Hill, Hon. G. W. McCrary, Rev. Dr. John Maclean, Hon. Peter Parker, Hon. George Bancroft, and Professor Henry, the Secretary.

The Chancellor took the chair.

The Secretary presented the following communication:

FORTY-FOURTH CONGRESS, FIRST SESSION.

CONGRESS OF THE UNITED STATES,
In the House of Representatives, *December* 14, 1875.

The Speaker appointed the following named members Regents of the Smithsonian Institution on the part of the House:

Mr. Hiester Clymer, of Pennsylvania.
Mr. Benjamin H. Hill, of Georgia.
Mr. George W. McCrary, of Iowa.

Attest: GEO. M. ADAMS, *Clerk.*

A letter was read from Hon. H. Hamlin, stating that he was unavoidably detained from attendance at this meeting.

The Secretary stated that he had the painful duty to announce the death, since the last session of the Board, of the Hon. Henry Wilson, Vice-President of the United States.

On motion of Dr. Parker, it was

Resolved, That a committee of three be appointed to prepare resolutions expressing the sentiments of the Board in regard to the death of Hon. Henry Wilson.

The Chancellor appointed Hon. Dr. Parker, Hon. T. W. Ferry, and Hon. J. W. Stevenson.

The Secretary presented a general exhibit of the condition of the fund, and the receipts and expenditures for the year 1875; which was referred to the Executive Committee.

Dr. Parker, from the Executive Committee, stated that, in order to

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save time, the committee had already examined all the vouchers and accounts of the Institution and of the National Museum, with the exception of eleven, which had been paid since the first of January, and was prepared to make a partial report, and that a full report would be made at the next meeting. He accordingly presented a statement of the receipts and expenditures, of the accounts examined, and a history of the funds, reserving until the next meeting the remainder of the report.

The Secretary gave an account of the method of keeping the accounts, drawing checks, &c., and showed the necessity of making up the annual statements of receipts and expenditures to include the semi-annual interest due on the 1st of January, but which this year had not been received from the Treasury Department until the 16th of January.

The Secretary also presented, for the information of the new members, a general account of the operations of the Institution, and the plans which had been adopted to carry out the will of Smithson "to increase and diffuse knowledge among men."

The Board then adjourned to meet on Wednesday, 26th January, at 7 o'clock.

WASHINGTON, D. C., *January* 26, 1876.

A meeting of the Board of Regents was held this day, at 7 o'clock p. m., in the Regent's room of the Smithsonian Institution.

Present, Chief Justice Waite, Chancellor of the Institution; Hon. T. W. Ferry, acting Vice-President of the United States; Hon. H. Hamlin, Hon. A. A. Sargent, Hon. H. Clymer, Hon. B. H. Hill, Hon. Peter Parker, Hon. George Bancroft, Professor Asa Gray, Professor Henry Coppée, and the Secretary, Professor Henry.

The minutes of the last meeting were read and approved.

Excuses for non-attendance were presented from Hon. J. W. Stevenson, Hon. G. W. McCrary, and Professor J. D. Dana.

Dr. Parker, from the special committee to prepare resolutions on the death of the late Vice-President, Hon. Henry Wilson, presented the following report and resolutions, which, he stated, had the approval of all the members of the committee:

Since the last annual meeting of the Board of Regents of the Smithsonian Institution, HENRY WILSON, Vice-President of the United States, and an honored member of the Regency, having departed this life, the Board deem it suitable that a just tribute to his memory and worth be entered upon the records of the Institution: Therefore,

Resolved, That among the distinguished men of the first century of our national existence who have been prominent for patriotism, practical wisdom, statemanship and high moral and Christian character, impartial history will assign Henry Wilson a distinguished rank; and as a representative man of the class of "*self-made men*" to which the verdict of mankind assigns exalted positions, the late Vice-President of

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the United States will long be remembered and highly appreciated by posterity.

Resolved, That the Secretary cause a copy of these resolutions to be transmitted to the relatives of the deceased.

Dr. Parker then made the following remarks:

Mr. Chancellor: Fitting encomiums upon the late Vice-President have already been pronounced, both in the Senate and House of Representatives of the United States, and, so far as I am informed, with an unanimity of appreciation, irrespective of all lines of demarkation, truly remarkable; and the pen and the press, not only in this but also in every civilized country, will set forth his just merits in appropriate panegyric. Besides, this is neither the place nor the occasion for extended eulogy, yet I desire brief indulgence.

The late Vice-President was my personal friend, and the proximity of our summer residences facilitated the exchange of social and friendly intercourse. It was my privilege also to see him in his last illness.

The prominent characteristics of Mr. Wilson, his humble origin, indigence, limited means of early education, the resolute determination by which he surmounted difficulties and rose to great distinction; his success in the attainment of lofty aspirations, even surpassing some of his contemporaries who had the greater advantages of classical and professional learning, are too well known to require repetition.

I wish, however, to recall very concisely only two of his distinguishing traits.

As a means to an end, Mr. Wilson was emulous of high positions that he might render it promotive of the best interests of the country, and of all classes composing it, especially the poor and the enslaved.

Whilst sincere in his practice and advocacy of *temperance*, in his denunciation of *slavery*, and his expressions of sympathy for the *laborer*, he had the sagacity to use these as means to the attainment of the coveted positions of high office and national influence. He was emulous also of distinguished place not only for its utility in the present, but still more so in reference to the future. I remember well his emphatic remark when the intelligence was received of the death of the eminent historian Prescott: "*I had rather live, as Prescott will live, in history, than be President of the United States.*"

Here may be found, I think, the predominating influence that urged him on in the completion of his historical work; with an all-absorbing devotion that far exceeded his physical and mental strength, and but for which, humanly speaking, he might be with us still.

The other prominent characteristic to which I wish simply to advert is, in his later years, his truly religious life. No one intimately acquainted with Mr. Wilson subsequently to his public profession of religion can doubt the genuineness of his Christian faith.

The hymn which he rose from his sick-pillow to mark at three o'clock in the morning, only a few hours before breathing his last, as though

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preadmonished his end had come, entitled "*The Christian and his echo*," may be regarded as a true exponent of his religious character, and as his last legacy to the country and the world—

"*True faith producing love to God and man.*"

The resolutions submitted by the committee were then adopted unanimously by a rising vote.

Dr. Parker, in behalf of the Executive Committee, presented the annual report of the receipts, expenditures, estimates, &c.; which, on motion of Mr. Sargent, was adopted.

The Secretary presented his annual report of the operations of the Institution for the year 1875; which was read, and various suggestions contained in it were discussed at some length by the members of the Board.

On motion of Dr. Gray, it was

Resolved, That a special committee of three be appointed to take into consideration the connection of the Smithsonian Institution and the National Museum, and to recommend such action as may be thought proper in relation to the matter.

The Chancellor appointed Messrs. Gray, Clymer, and Sargent as the committee.

The report of the Secretary as to what the Smithsonian Institution was doing and had done in relation to the Centennial Exhibition in Philadelphia was read.

On motion of Mr. Hamlin, it was

Resolved, That the annual report of the Secretary be accepted, and be transmitted to Congress, as usual.

On motion of Mr. Sargent, it was

Resolved, That the salary of the chief clerk of the Institution be twenty-five hundred dollars per annum, commencing with the present year.

On motion of Mr. Clymer, it was

Resolved, That the Secretary be authorized to procure a carriage for the use of the Institution, for a sum not to exceed four hundred dollars.

The Board then adjourned to meet at the call of the Secretary.

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JOURNAL

OF THE

EXECUTIVE COMMITTEE

OF THE

SMITHSONIAN INSTITUTION,

FROM SEPTEMBER 12, 1846, TO DECEMBER 21, 1849.

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EXTRACTS

FROM THE JOURNAL OF THE BOARD OF REGENTS, RELATIVE TO THE APPOINTMENT OF AN EXECUTIVE COMMITTEE.

On the 8th of September, 1846, the Board proceeded to the election of an Executive Committee by ballot; and, upon counting the ballots, it appeared that Mr. Owen, Mr. Seaton, and Mr. Totten were elected.

It was then—

Resolved, That William W. Seaton be, and he is hereby, appointed chairman of said Executive Committee.

On the 5th of February, 1847, on motion of Mr. Hilliard—

Ordered, That Mr. A. D. Bache be appointed temporarily on the Executive Committee, in the place of Mr. J. G. Totten, who is now in Mexico.

JOURNAL.

FIRST MEETING.

September 12, 1846.

Present, Messrs. Seaton, (Chairman,) Totten and Owen.

Mr. Owen submitted to the committee a copy of a letter which he had prepared with the intention, if approved by the committee, of having it addressed, by the chairman, to the respective members of the Board, as follows:

WASHINGTON, *September* 12, 1846.

SIR: The Executive Committee of the Smithsonian Institution have, since the adjournment of the Board of Regents, had under their consideration a subject of so much importance, and so deserving of immediate action, that they have unanimously instructed me to address you and the other Regents on the subject, and to ask that you will, at your earliest convenience, afford them the benefit of your opinion on the matter.

The amount of accumulated interest declared by the bill to be due 1st July, 1846, is $242,129. The whole of this we have now a right to draw out of the Treasury. If we did so, we could purchase with it United States stocks, at or near par, thus obtaining six per cent. thereon until we require the money. Actually to draw it out might embarrass the Treasury at the present juncture; but, as our rights in the case are undoubted, and as we shall not require for current expenses, until 1st of January next, more than the odd $2,129, the Executive Committee are unanimously of opinion that a request should be forthwith made, in behalf of the Institution, to the Secretary of the Treasury, that he will issue United States stocks in the name of the Smithsonian Institution, to the amount of $240,000.

The Executive Committee believe, from the liberality of feeling which the President and the Secretary have evinced towards the Institution, that its claim will at once be recognized, and the stocks issued at our request.

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As it is not at all likely that we shall require, next year, even to expend the interest accruing *since 1st of July last*, the increase to the income of the Institution for the year 1847, will, by this single operation, be $14,400; and, instead of its income for that year being about $31,000, it will be nearly $45,500.

If your reply, and that of the other Regents, should favor this view—and that it will the committee entertain no doubt—then, the chairman of the Executive Committee will consider himself authorized immediately to endeavor to negotiate the matter with the Treasury Department.

As the amount of interest now lost, under the present posture of things, is large, (being about $40 a day,) you will perceive the importance of favoring us with a reply, without unnecessary delay.

I am, sir, very respectfully, your obedient servant,

W. W. SEATON,

For Himself and in Behalf of Joseph G. Totten and Robert Dale Owen.

On motion of Mr. Owen—

Resolved, That the chairman of this committee, on behalf of the committee, address to each member of the Board of Regents a copy of the above letter.

The chairman submitted certain accounts, which were approved, and ordered to be paid.

And, on motion, the committee adjourned.

SECOND MEETING.

October 31, 1846.

Present, Messrs. Seaton (Chairman) and Totten.

The chairman submitted to the committee the replies he had received from the several members of the Board, to the letter addressed to them, under date the 12th of September last, regarding the investment of the accrued interest of the Institution. The replies are as follows:

PHILADELPHIA, *September* 18, 1846.

SIR: Your letter, dated the 12th instant, but postmarked the 17th, reached me this morning; and attracts my immediate attention. It is written on behalf of the Executive Committee of the Smithsonian Institution, and proposes that a request should be made "to the Secretary of the Treasury, that he will issue United States stocks in the name of the Smithsonian Institution to the amount of $240,000." The object, as you explain it, of this operation is to increase the income.

After attentively considering this proposition, I am unable to give it my sanction; and I hasten to apprize you of that fact, without entering at large upon the reasons on which my opinion rests. The Executive Committee will, I hope, abstain from acting on the subject. To me, the act of Congress seems almost expressly to provide, 1. That the custody of the $242,129 shall remain with the National Treasury; 2. That it shall not be converted into stocks of any sort; and I cannot perceive where the Secretary would find his authority to issue such certificates, or where the Regents would find their authority to accept them. 3. That it can be drawn from the Treasury in no other manner than the one prescribed in the last clause, but one, of the third section of the act; that is to say:

"When money is required for the payment of debts or performance of contracts, incurred or entered into, in conformity with the provisions of this act, or for making the purchases and executing the objects authorized by this act, then, the Regents, or the Executive Committee, certify to the Chancellor and Secretary that such money is required; whereupon they examine the same, and if they approve, they shall certify the same to the proper officer of the Treasury for payment."

I would also specially refer to the provisions of the fifth section, as to contracts, the claims upon them, and their settlement and payment at the Treasury of the United States. If the stocks were taken as suggested, it is quite clear that, as these forms

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would be nugatory, we should have complete control of the fund, before any contract or purchase was made; it would be subject to the fluctuations of the stock market; we should have to sell out as emergency required, and might thus be exposed to embarrassment and loss; and, in fine, we should, by departing from the law, lose securities and incur risks which, I think, we ought not to lose or incur.

I am, very respecfully, your most obedient servant,

G. M. DALLAS,
Regent and Chancellor of the Smithsonian Institution.

W. W. SEATON, Esq.
Chairman of the Executive Committee.

BALTIMORE, *September* 18, 1846.

SIR: I received this morning your letter of the 12th instant, stating that the Executive Committee of the Smithsonian Institution propose to request the Secretary of the Treasury (if it meets the approbation of the Regents) to issue United States stock, in the name of the Institution, to the amount of $240,000, on account of the arrearages of interest due July 1st, 1846.

I have not a copy of the law before me, and cannot, therefore, undertake to say whether it authorizes the proposed arrangement. If it does, the plan proposed appears to me to be both just and expedient; and will have my cordial approbation; for the Institution is entitled to all the benefits arising from the fund bequeathed, and if the Government uses it, it ought to pay interest.

I am, with great respect, your obedient servant,

R. B. TANEY.

W. W. SEATON, Esq.,
Chairman of the Executive Committee, Smithsonian Institution.

SYDENHAM, NEAR PHILADELPHIA, *September* 18, 1846.

SIR: Having made an excursion into Virginia, after the late adjournment of our Board on the 9th instant, from which I did not return until yesterday, it was not until then that I received your communication of the 12th, and I hasten to say, in reply, that if the plan of issuing United States stock, bearing interest, in favor of the Smithsonian Institution for the amount of accumulated interest now due and payable to us—say two hundred and forty thousand dollars—can be carried into effect, I think it so clearly beneficial to the Institution that, as one of the Regents, it has my hearty concurrence.

With the highest respect, I remain, your obedient servant,

RICHARD RUSH.

COLUMBIA, SOUTH CAROLINA, *September* 30, 1846.

MY DEAR SIR: I have just returned from an interior watering place where, for some weeks, I have been seeking health, which will excuse me, I trust, for an apparent neglect of your letter.

I most heartily concur in the opinion of the Executive Committee, that a request should be made to the Secretary of the Treasury to issue United States stock in the name of the Smithsonian Institution, to the amount of $240,000. I think it clearly and urgently the duty of the committee to invest every disposable fund in such a manner as to augment it, until the institution has occasion for it.

I esteem myself very unfortunate in not having been able to attend the meeting of the Regents, and my chagrin is increased by seeing that the next meeting is fixed at the time of the commencement of the college, when my presence here is indispensable. This is really provoking; for my heart is very much set upon helping to put the institution in motion; and I fear that my absence may create some inconvenience. May I pray you, my dear sir, to inform me whether there is reason to apprehend any thing of that kind, that I may make way for some one else who can be present.

Besides the painful sense of failure in the performance of a very agreeable duty, I am compelled to forego the pleasure of meeting very highly valued friends; amongst whom I hope I may be allowed to consider you; for,

I am, dear sir, with very high respect, your obedient servant,

WILLIAM C. PRESTON.

Mr. SEATON.

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BOSTON, *September* 22, 1846.

MY DEAR SIR: I am requested by Mr. Choate, who has just left me, to say to you from him, that he has received your communication respecting the investment of the fund now on hand in United States stock, bearing interest; and that he cordially approves the proposal, and hopes that it will be immediately carried into effect, so as to secure the interest to the Institution.

I am, my dear sir, faithfully yours,

ROBERT DALE OWEN.

W. W. SEATON,
Chairman Executive Committee.

GARDINER, MAINE, *September* 20, 1846.

SIR: I have just received your letter of the 12th, postmarked 17th, instant, and lose no time to reply to it.

I had an impression, from whence derived I cannot say, that the United States had already agreed to pay to the Smithsonian Institution interest upon the whole amount, principal and interest, now in the Treasury, or for which the United States are responsible. If this be not so, it is certainly equitable and just, that the Institution should be allowed interest on the amount of accumulated interest, or that it be at once paid over, so that it may be profitably invested.

I therefore concur readily in the proposed arrangement, viz: that the Executive Committee demand and receive from the Treasury the sum of $240,000, in United States stocks at par, or at a small advance.

In the present State of the Treasury, I presume the Secretary would prefer to issue certificates of stock, rather than to pay the amount in money, and this course would be most desirable for the Institution.

Very respectfully, your obedient servant,

GEORGE EVANS.

W. W. SEATON,
Chairman Executive Committee, Smithsonian Institution.

CARLYLE, ILLINOIS, *September* 28, 1846.

DEAR SIR: On my return from Washington, on yesterday, I found your letter of the 12th instant, requesting my opinion as to the investment of the interest already accrued upon the Smithsonian bequest, in United States stocks.

In reply, I can only say that, had I been present at the late meeting of the Board, I should have made the identical proposition contained in your letter. I spoke of it to some friends while in Washington, and hope the Executive Committee will not delay action upon it. It is too important to be overlooked or postponed.

With great respect, your obedient servant,

SIDNEY BREESE.

W. W. SEATON, Esq.,
Chairman Executive Committee, Smithsonian Institution.

ALBANY, *September* 18, 1846.

SIR: I this morning received your communication made in behalf of the Executive Committee of the Smithsonian Institution, requesting my opinion on the propriety of investing the accumulated interest due to that Institution in six per cent. stock of the United States, &c.

If the Secretary of the Treasury will, on application to him for that purpose, issue stock for accumulated interest due as above stated, I have no hesitation in expressing my opinion in favor of making an application to him for such a purpose.

With great respect, your obedient servant,

GIDEON HAWLEY.

W. W. SEATON, Esq.,
Chairman Executive Committee, Smithsonian Institution.

NEW YORK, *September* 25, 1846.

DEAR SIR: Your favor, under date of the 12th instant, relative to an application to the Secretary of the Treasury for the accumulated interest upon the Smithsonian

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fund, to the amount of $240,000, or for United States stocks in its stead, with a view of putting that amount on interest until it shall be wanted for building purposes, &c., reached me at this city, not until last evening, or it should have received an earlier answer.

I appreciate the motive of the Executive Committee, and would most cheerfully unite with them in asking for the money, did I believe the act incorporating the Institution authorized such application; but I cannot give it any such interpretation. It provides, that the money may be drawn from the Treasury upon the certificate of the Chancellor and Secretary, that it is wanted for payment in erecting buildings and other incidental expenses of the Institution, but not for the purpose of being loaned, &c. And should an application be made for it to the Secretary of the Treasury, this, I presume, would be the objection with which you would be met. If, however, it shall be ascertained that the Secretary will give us the money, or stocks in its stead, then I most cheerfully join you in an application for it.

I am, sir, with esteem, your obedient servant,

WILLIAM J. HOUGH.

W. W. SEATON, Esq.

HARRISONBURG, *September* 20, 1846.

SIR: I have just received yours of the 12th instant, post-marked the 18th, and I hasten to answer it, as you request me to do.

I concur with you fully, that it would be very desirable that interest should accrue on the $240,000 of which you speak, until it should be wanted for the purposes of the act; but I am sorry to say, that I have not been able to satisfy myself, as you have done, that "we have *now* the right to draw out of the Treasury the whole of the $242,129, and purchase with it United States stocks," &c. Nor have I been able to satisfy myself that it would be competent for the Secretary of the Treasury to issue United States stocks, for the sum you mention, bearing interest. You may be right, and I may be wrong, but these doubts are entertained; and I consider myself bound frankly to say so to you. By your leave I will state my reasons for those doubts.

In the first place, then, it appears to me, that the fund, of which we are speaking, can be drawn from the Treasury only for the purposes mentioned in the act, and be applied only for those purposes. The last clause of the third section says:

"Whenever the money is required for the payment of the debts or the performance of the contracts of the Institution, or for making the purchases and executing the objects authorized by this act, the Board of Regents, &c., may certify to the Chancellor, &c., that such sum is required; whereupon, they shall examine the same, and, if they shall approve thereof, shall certify the same to the proper officer of the Treasury for payment," &c.

This would seem to imply, that the fund could be drawn upon only whenever the money was required to be paid out for the purposes just mentioned. The Government intended to keep the money in its own hands, and not to pay it to the Regents, except for the purposes mentioned. If they could draw the money before it was actually wanted for the purposes mentioned, and buy United States stocks with it, "at or near par," it can be imagined that the money might not be as safe as if it had remained as the law had placed it.

In the next place, I am not satisfied that the Secretary can issue the stocks of which you speak. It appears to me, that Congress did not intend that the Government should pay interest on the interest which had accumulated. If they had so intended they would probably have said so. It must have been known to them that the whole of the $242,129 could not be at once expended. Nay; they must have known that it would take sometime to put up the buildings which would be the principal drain on the sum in question. They, therefore, knew that a large portion of the sum would remain in the Treasury for sometime unexpended. Why did they not then declare that the unexpended balance should, after a certain period of time, bear interest, as the principal sum of $515,169 bears interest? Simply because, as it appears to me, they did not intend it.

This inference is strongly supported by the language of the act. The second section seems to negative the idea, that there is to be paid interest upon interest. It declares that the sum of $515,169 is "*lent*" to the Treasury "at six per centum per annum interest," from the 1st of September, 1838, when the said sum was first received into the Treasury. That is the sum that was "*lent*" and "*at interest.*" The $242,129 was not "*lent*," and therefore could draw no interest; but on the contrary, it was directly "*appropriated* for the erection of suitable buildings," &c.

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Again: "Six per cent. interest '*on the lent fund,*'" ($515,169,) payable half-yearly, &c., is appropriated for the perpetual maintenance and support of the Institution, and not a word is said about interest on any other fund. The rule, then, of interpreting laws "*expresio unius, exclusio est alterius*" applies. It would, therefore, seem to follow, that Congress did not intend to pay interest upon interest. Can the Secretary of the Treasury, then, do that by *indirection*, which the law did not contemplate should be done? Can he issue stocks, bearing interest, for a sum on which Congress did not intend that interest should be paid? It would seem to me not.

Such are the views which I, at present, take of the subject. I would have been glad if Congress had allowed us to make interest on interest which had accrued, but not having done so, (as I read the law,) I would be unwilling to attempt it without further authority from them. It is possible that, at the next session, the act might be amended in this particular, as well as in others, if it should be thought necessary to make the application.

I regret that there is a diversity of opinion upon this subject between the Executive Committee and myself, but they will hear the views of other gentlemen, and will act according to the lights before them.

I am, most respectfully, your obedient servant,

I. S. PENNYBACKER.

W. W. SEATON, Esq.,
Chairman Executive Committee, Smithsonian Institution.

WASHINGTON, *September* 16, 1846.

SIR: I have the honor to acknowledge the receipt of your letter of the 12th inst., in which you state the views of the Executive Committee of the Smithsonian Institution, as to the best plan for employing the accumulated interest, declared by the late act of Congress to be due.

It is proposed to invest it in United States stocks, with the view of obtaining six per cent. on the amounts until the money is required for actual use. The statement of the plan and its advantages, which you have given me, is so satisfactory, that I hasten to express my concurrence in your views.

Very respectfully, your obedient servant,

HENRY W. HILLIARD.

W. W. SEATON, Esq.,
Chairman of Executive Committee, Smithsonian Institution.

ANDOVER, MASS., *September* 18, 1846.

To W. W. SEATON, Esq., Hon. ROBERT DALE OWEN, Col. JOSEPH G. TOTTEN,
Executive Committee of the Regents of the Smithsonian Institution.

GENTLEMEN: Yours of the 12th instant, was received yesterday. The question which you ask being one referring to the construction of a law, I feel quite incompetent to give an opinion which should carry any weight in it. It seems to me, now, though I should defer to legal authority in the matter, that the appropriation named in the act of Congress establishing the Smithsonian Institution can only be drawn from the Treasury as it is wanted for building purposes, and, like other appropriations, cannot be drawn out for investment; and, like the accumulations of interest on the original fund, is not subject to the process of compound interest. Should the Attorney General of the United States, or the Secretary of the Treasury, be of opinion that the Regents have the power to draw this money and to invest it in Government securities, I wish to be understood as co-operating in the measures which the Executive Committee may take in accordance with that advice.

Very respectfully yours,

A. D. BACHE.

It appearing from the above letters, that a difference of opinion existed among the Regents, as to the power of making the investment in question.

On motion of Mr. Totten, it was—

Resolved, That it is inexpedient for the committee to act on the subject of the investment of interest belonging to the Institution.

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The chairman laid before the committee certain accounts, which were allowed, and ordered to be paid.

And, on motion, the committee adjourned.

THIRD MEETING.

March 15, 1847.

Present, Messrs. Seaton, (Chairman,) and Owen.

Mr. Edward Stabler, of Sandy Spring, Maryland, appeared before the committee, and, after some conversation with him in regard to the seal of the Institution, which, by resolution of the Board of Regents of the 24th February, the committee was authorized to procure,

On motion of Mr. Seaton, it was—

Resolved, That Dr. Owen be requested to make a reduced copy of the medallion head of Smithson, of the proper size for a seal, and with suitable borders and lettering, and that he submit the same to this committee for approval.

Resolved, That Mr. Edward Stabler be authorized to prepare a seal, for the Institution, in the best style of art, with a die and counter-die of cast-steel and a cast-steel screw press.

Resolved, That the Secretary of the Institution be authorized to deliver to Mr. Stabler the original medallion head of Smithson, from which to copy the likeness for the seal of the Institution.

The chairman submitted certain accounts, which were approved, and ordered to be paid.

And, on motion, the committee adjourned.

FOURTH MEETING.

March 17, 1847.

Present, Messrs. Seaton (Chairman) and Owen.

Dr. Owen submitted to the committee a reduced copy of the medallion head of Smithson, of the proper size, for the seal of the Institution, with suitable borders and lettering; which, in accordance with a resolution of this committee, he had prepared.

It was approved by the committee.

And, on motion, the committee adjourned.

FIFTH MEETING.

September 15, 1847.

Present, Messrs. Seaton (Chairman) and Totten.

The Chairman submitted to the committee the following letter, received sometime since, from Mr. Edward Stabler:

SANDY SPRING, *June* 6, 1847.

Colonel SEATON.

ESTEEMED FRIEND: Understanding that you desired to have an engraving on copper or steel plate, with the likeness of James Smithson, for the purpose of attach-

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ing to the publications of the Institution, I should be glad to furnish the plate, either with line or ruled engraving, and on copper or steel, as may be preferred. Having prepared a large model of Smithson, (the *portrait* filling a space of 5½ inches diameter,) which is admitted by all, who have compared it with the original bronze cast, to be a perfect likeness, I can afford it at a less cost than others, and of a quality equal to any.

I can furnish either the line or ruled engraving, though would recommend the latter as decidedly preferable on several accounts. It can be engraved much deeper, without affecting the shading or other parts of the work; and consequently will afford a much greater number of perfect printed impressions—I should think twice as many as the line engraving.

Having a perfect model, and doing the work by machinery, the likeness must be equally so.

The bold strong relief which this kind of engraving gives, is, in my opinion, much handsomer than a picture. Samples of which I exhibited to thee—*mais chacun à son gout.*

I have now secured the likeness of Smithson on the steel seal, beyond all doubt of failure; and as soon as I get through with Government, for the United States district, county of Florida, will resume, and soon finish the Smithson work. The Florida work is very pressing.

I am, with much respect, thy friend,

EDWARD STABLER.

A first-rate steel plate with line engraving will cost about $200 to $225. The same by ruling I can furnish for $150, more durable, and more beautiful.

On motion, it was laid on the table.

The chairman also submitted the following additional letter, just received, from the same gentleman:

SANDY SPRING, *September* 9, 1847.

Colonel SEATON.

ESTEEMED FRIEND: After much delay, partly owing to an unusual press of Government work, and indisposition during most of the warm season, I am enabled to send thee a proof impression of the Smithsonian seal. It is not quite finished in some portions, but I do not propose to make any material alterations. I would like thy opinion on it before hardening, for after that it cannot be altered.

Make the proper allowance for the difference of relief in the bronze cast, and this, which is adapted for sealing purposes, and it is doubted whether a better likeness could be had. It is by far the most tedious and laborious piece of work I ever executed, or ever intend to do again.

Some considerable time since, I requested to be informed whether I should prepare a mahogany or cherry stand and case for the press. Those for the Departments are, I think, without exception, made of mahogany. They are the best, and in the end, the cheapest, I find, for they are not so much affected by the changes of weather, and consequently better protect the press from dust.

As this shall be the best piece of work I ever put together, I would like to furnish a mahogany stand and case with glass doors, that will show the work to advantage, and show the "increase" of this kind of knowledge.

The difference of cost between the two kinds (*i. e.*, the cherry and mahogany) is only some $8 or $10, and as furniture, is worth the difference, to say nothing of the beauty. The whole will be under lock and key, and as it will be little used until the buildings are completed, I would also suggest that, for the present, it be placed in the National Institute. It will probably benefit me in my business, much more than this job itself will.

Please advise me, as early as may be convenient, so as to have the stand and case prepared in the best manner.

I will also thank thee to inform me of the residence of Robert Dale Owen, and also of Dr. Owen, as I wish to send them impressions of the seal.

I am, with much respect, thy friend,

EDWARD STABLER.

On motion of Mr. Seaton, it was—

Resolved, That Mr. Stabler be authorized to furnish a mahogany stand and case for the seal of the Institution.

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The chairman submitted certain accounts, which were approved, and ordered to be paid.

And, on motion, the committee adjourned.

SIXTH MEETING.

November 27, 1847.

Present, Messrs. Seaton (Chairman) and Owen.

On motion of Mr. Seaton—

Resolved, That Mr. Owen write to Mr. Stabler, requesting him, if the seal of the Institution be completely finished, to have the same in Washington on the 8th inst., so that it may be presented to the Board; and also requesting him to send in his account for the same.

On motion of Seaton, it was—

Resolved, That Mr. Owen prepare, and submit to this committee, a report, embodying a proposed scale of expenditures for the four years next following the 19th of March, 1848, to be presented to the Board of Regents at their next meeting.

The chairman laid before the committee sundry accounts, which were approved, and ordered to be paid.

And, on motion, the committee adjourned.

SEVENTH MEETING.

December 7, 1847.

Present, Messrs. Seaton, (Chairman,) Totten and Owen.

Mr. Owen submitted to the committee, in accordance with a resolution of the committee of the 27th ultimo, a report, embodying a proposed scale of expenditures for the four years next following the 19th of March next; together with certain resolutions thereto appended.

After discussion, the report and resolutions were agreed to, and signed by the committee, and are as follows:

Report of the Executive Committee of the Smithsonian Institution, embodying a Proposed Scale of Expenditure, for four years from the 19th of March, 1848, *being the remainder of the term of the Contract for the erection of the Institution Building.*

The contract for the Institution building has been made; the building itself is considerably advanced; and the Building Committee have had an opportunity of ascertaining, with some degree of accuracy, the entire amount of expenditure, made or authorized, or necessarily to be incurred, on the said building, and on the lot on which it stands, until the same shall be completed, say on the 19th of March, 1852.

Some progress has also been made in the preparation of transactions and, in carrying out other measures in fulfillment of the will of the testator, to "increase and diffuse knowledge among men."

At this point of progress, the Executive Committee, knowing the great desire often

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expressed by various members of the Board during former meetings, that the erection of the Institution building, though necessarily spacious on account of the special requirements of the act organizing the Institution, should not withdraw, from the funds of the Institution, more than a moderate portion even of that accumulated interest, which the appropriation by Congress authorizes to be thus employed; remembering, also, that the Chancellor, and one of the members of the Board have heretofore introduced resolutions embodying their wish that the sum thus withdrawn should not, if possible, exceed one hundred thousand dollars; but, more especially, calling to mind the fact that, a certain prospective plan of finance and scale of expenditure, throughout the years in which the building shall be in progress, has been heretofore submitted to the Board by one of its members, and though not spread formally upon its minutes, did, in fact, receive the sanction of the Board; ask leave here to submit a scheme of expenditure, for four years from the 19th of March next, based upon that plan of finance, and differing from it only in some details, suggested by the present state of the financial affairs of the Institution; by which the above objects may substantially be accomplished, so that on the 19th of March, 1852, when the building shall be completed, including its fitting up, furnishing, lighting, and heating, and the lot belonging to the Institution shall be laid out, planted, and permanently fenced; and when, in a word, everything shall be prepared, so that the Institution can go into full operation, without any necessity to take from its current income, thereafter, any amount to add to its buildings or to secure or adorn its grounds, there shall still remain, as a permanent fund, bearing six per cent. interest, payable semi-annually, the original capital of $515,169, and the interest that has accumulated on the same, specified in the second section of the act organizing the Institution, to wit: the sum of $242,129, deducting from these two sums about one hundred thousand dollars only; or, in other words, so that the sum of $657,898, or thereby, should remain, on the 19th of March, 1852, as the permanent fund of the Institution.

To carry out a plan having this desirable object in view, two conditions, both within the power of the Board, are necessary: the first, that the entire cost of the building, including the complete fitting up and furnishing of the same; lighting and heating, ventilating and draining the same; supplying the same with water; laying out in grass, and planting with trees and shrubs the lot; fencing the same, both with the present temporary fence, and the final permanent one; also, all expenses for superintendence of erection, including the cost of architect's office, and other incidentals; so as, in fact, to cover all expenses whatever that have been incurred, and are to be incurred, on the building and on the lot on which it stands, until the completion of the building and of the preparation of the lot up to the 19th of March, 1852, shall not exceed *two hundred and fifty thousand dollars;* of which the balance unexpended on the 19th of March, 1848, shall be expended in nearly equal proportions in each of the four years next following that date.

The second condition is, that the entire current expenses of the Institution, exclusive of those just enumerated, but including the expenses of the Board and its committees; the salaries of officers, including messenger; the expense of all publications, researches, or other similar undertakings; the purchase of books and apparatus, and all incidentals whatever, not enumerated in the foregoing paragraph, shall not exceed, for each one of the four years next, after the 19th of March, 1848, *fifteen thousand dollars.*

The committee proceed to furnish the details necessary to substantiate the position here taken.

In pursuance of instructions contained in a resolution of the Board of the 28th of January last, this committee, after certifying to the Chancellor and Secretary the amount of contracts entered into, and authorized, by the Board, received the said amount, to wit: the sum of two hundred and fifty thousand dollars, in Treasury notes, payable to the order of the Chancellor of the Smithsonian Institution, dated the 17th of February, 1847, and bearing six per cent. interest, payable semi-annually thereafter. These Treasury notes are deposited for safe keeping with the Treasurer of the United States; and the Board will recollect that, by its resolution of the 28th of January last, they can be drawn out only upon checks or warrants, signed by the Chancellor, the Secretary, and the Chairman of the Executive Committee. Of these Treasury notes, ten thousand dollars were thus drawn out, on the 30th of October last, to pay the contractor and other expenses. The remainder, to wit: the sum of two hundred and forty thousand dollars, still remains invested in said Treasury notes. The ten thousand dollars sold netted $10,121.67; being par, with interest added to the day of sale.

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By this arrangement, very favorable to the finances of the Institution, the whole of its funds, both original principal and accumulated interest, at present amounting to the sum of $755,169, become productive; bearing, under the safest possible investment, six per cent. annual interest, payable semi-annually.

So long as no more Treasury notes are sold, the annual income of the Institution from the above sum thus invested will be, on original principal, $30,910; and on Treasury notes, $14,400; together, *forty-five thousand three hundred and ten dollars* annually.

If the entire annual expenses of the Institution, for building and all other purposes, could be restricted to the above sum of forty-five thousand three hundred and ten dollars, it is evident that the annual income of the Institution would remain permanently at that amount.

Whenever any amount of Treasury notes is sold, the interest from that source, of course, ceases. Whatever annual amount, therefore, beyond the above $45,810, shall, in the course of four years, after the 19th of March, 1848, be expended by the Institution; that amount, together with six per cent. interest on each item of Treasury notes sold, from the date of the several sales to the 19th of March, 1852, will be so much deducted from the present investment; that is to say, from the sum of $755,-169.

It remains to be seen, what the annual excess beyond the above annual income will be, in each of the four years next following the 19th of March, 1848; if the suggested scale of expenditure be adopted; and how much of the present capital of the Institution, the said excess will absorb.

The balance on hand, to meet current expenses on the 1st instant, as will appear by reference to the bank-book of the institution, herewith submitted, was $2,991. The amount of interest which will be received by the Institution previously to the 19th of March next, is $22,655, to wit: on the 1st of January next, $15,455; and on the 17th of February next, $7,200. These two items, added to the balance in hand, give $25,-646; being the amount available, without encroaching on the present investment, up to the 19th of March next; that is to say, up to the termination of the first year of the building contract.

The committee, after consultation with the Secretary of the Institution, as to the several amounts which may be required in the course of the winter and spring, for the various objects entrusted to him; after carefully calculating, also, the expenses to arise from this time to the 19th of March, have introduced a series of resolutions, appropriating the above amount of $25,646.

The committee learned from the Secretary that the expense of the first volume of the Transactions of the Institution would be considerable, on account of the number of plates; and, at his suggestion, they have put the appropriation for that object, out of the above fund, at $2,000 instead of $1,000, as formerly voted. At his suggestion, also, they have set apart, for apparatus, one thousand dollars. In accordance with a request made in the report of the Building Committee to the Board, they have also increased the appropriation for the forthcoming volume on Public Architecture, from one thousand dollars to two thousand dollars. The item for contingencies, including the expenses of the Board and its committees, they have put at $1,646. If, as the committee recommended, a resolution be passed, that there be hereafter but one annual meeting of the Board, its expense will not exceed $500 or $600, which will leave a margin of upwards of one thousand dollars, for incidentals and contingencies, including the seal of the Institution not yet paid for.

After these various items have been, as the committee think, all fully provided for, so that they shall not fall upon the current expenses of the year commencing on the 19th of March next; there still remains, out of the above $25,646, the sum of seventeen thousand dollars, to be appropriated to the building fund; as by the following synopsis of receipts and appropriations will more clearly appear:

Proposed Appropriations, viz:

For first number of Transactions	$2,000
For work on "Public Architecture"	2,000
For experiments on building materials heretofore ordered by the Board	500
For part salary of Secretary	1,500
For apparatus	1,000
For the building fund	17,000
For contingencies, including expenses of the Board and of its committees	1,646
Total	$25,646

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Receipts from interest, up to the 19th March, 1848, viz:

On the 1st of January	$15,455
On the 17th of February	7,200
Total from interest	$22,655
On hand, 1st December, 1847	2,991
Total available fund to 19th March, 1847	$25,646

By the report of the Building Committee, dated the 1st instant, it will be seen, that the expenditure for the building and grounds, including superintendence and other contingencies, was $25,002.67; say twenty-five thousand dollars. Add to this amount the above proposed appropriation of $17,000; and it will appear that, up to the 19th of March next, there is provided, towards the building fund, the amount of $42,000; being some six thousand dollars more than the probable expenditure to that date, as estimated by the Building Committee.

If the above amount of $42,000 be deducted from the entire amount of building fund, as now proposed to be fixed at $250,000, it will leave, to be provided towards that fund, in the four years next following the 19th of March next, the sum of $208,000. If, as proposed, this amount be spread equally over the said four years, it will give an expenditure, each year, for these objects, of $52,000.

If, now we deduct from the annual income of the Institution, as it will stand on the 19th of March next, the sum of $15,000, hereinbefore proposed to be annually appropriated for objects not connected with the building and grounds, it will leave an annual amount, from accruing interest, of $30,810; which may go to the building fund, so long as the present investment remains undiminished.

But, if we deduct this sum of $30,810 from the annual amount still to be provided for building purposes, in each of the four last years of the building contract, as shown above, to wit: from the sum of $52,000 we shall have an annual excess of expenditure, over available interest, of $21,690; which annual excess must be provided for by sale of Treasury notes. And, as in proportion as these are sold, the interest on them, until the end of the term of the building contract, will be lost to the building fund; this annual excess, thus to be provided for by sale of Treasury notes, will, if we suppose it to be drawn at the commencement of each year, (which is the most unfavorable supposition,) reduce the invested fund, in the course of the four years ending 19th March, 1852, nearly $100,000; thus:

Excess during the first year	$21,690 00
Four years interest on ditto	5,205 60
Excess during the second year	21,690 00
Three years interest on ditto	3,904 20
Excess during the third year	21,690 00
Two years interest on ditto	2,602 80
Excess during the fourth year	21,690 00
One years interest on ditto	1,301 40
Total	$99,774 00

It appears, therefore, that, after setting aside sufficient appropriations for all objects now in progress, together with an adequate allowance for contingencies up to the 19th of March, 1848, we may, commencing from that date, authorize the annual expenditure until the completion of the building, of fifteen thousand dollars, for objects unconnected with the building fund; and then, if we restrict the building fund to $250,000, and provide, that of the last $208,000 of that fund, not more than one-fourth of the same, that is to say $52,000, shall be spent in each of the last four years of the contract, shall be able to complete the building and grounds, including all expenses thereon, without withdrawing more than one hundred thousand from the present invested funds of the Institution.

And as these invested funds, to wit: the sum of $755,169, amount to within $2,229 as much as the total amount of principal and interest by the charter conveyed to the Institution, it follows that, by the proposed plan the building may be completed without withdrawing from the original funds of the Institution, as they stood on the day it was chartered, more than $102,000.

To the conditions necessary to bring about a result, which will be confessed to be desirable, there is not, the committee think, any just objection.

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The Building Committee, after some experience and a careful examination of the subject, express, in their report, the opinion that a building fund of $250,000 will probably be sufficient.

The expediency of applying to the building fund, for four years to come, the interest accruing, over and above an annual sum of fifteen thousand dollars, alone remains to be considered.

It is evident that the act organizing the Institution contemplated the application of a portion of the current interest, while the building was in progress, to its erection; for, after appropriating the accumulated interest for the erection of a building, it adds, in the fifth section, "together with such sum or sums out of the annual interest accruing to the Institution as may, in one year, remain unexpended, after paying the current expenses of the Institution." The sole question, then, is what amount of that interest may, judiciously, be thus applied.

It will be admitted, that the amount suggested for the current expenses of the Institution, until the building shall be completed, to wit: the annual sum of fifteen thousand dollars, is a sufficient one gradually to bring its plans into execution, provided a considerable portion of the same be not annually expended in the purchase of books and collections.

The committee think this cannot wisely or advantageously be now done; and that, for the present, the only purchases made of books for the Institution, should be as heretofore expressed in the report of the Committee on Organization, of "such valuable works of reference, as, in the prosecution of its plan, may be required." In accordance with these views, the committee report a resolution.

If any considerable amount of books, beyond those required for present reference, be purchased at this time, they will lie in boxes, with much risk of injury, and no possibility of being accessible to the public. Nor, the committee think, will it be prudent or desirable, while the main building is in progress, and while temporary arrangements must be made in one of the wings for the reception of such works, as by purchase, by exchange, and from other sources, shall have accumulated in the library, to open that provisional library to the public. Few would be likely to resort to it, as a place of study, amid the noise and confusion incident to the erection of an extensive building.

Again, though no large sums be spent directly for books, for the present, every appropriation made for the publication of Transactions, or other works, to be distributed to learned scientific societies throughout the world, is a virtual contribution to the library. It cannot be doubted that the exchanges to which, by such extended distribution, the Institution will be entitled, will, in many cases, over pay, in the shape of additions to the library, the cost of the works distributed.

And, finally, it should be remarked, that, under the scale of expenditure herein proposed, the sum of a hundred and forty thousand dollars will be added to the original capital of the Institution; making an addition to its income of eight thousand four hundred dollars, annually, forever; one-half of which, by the resolutions, will enure to the benefit of the library. It was doubted, at the time of the passage of these resolutions, whether, under their operation and supposing the entire income of the Institution to be the interest from its original capital, the permanent annual appropriation for the purchase of books, could exceed from four to five thousand dollars. By the operation of the present plan, it may, therefore, be considered as doubled, or nearly so. The additional four thousand two hundred dollars added, by that plan annually, forever, to the library appropriation, is far more than an equivalent for the delay it presupposes in the accumulation of works not wanted for immediate reference or present purposes; a delay extending only to the period when suitable permanent arrangements can be made for their reception.

In accordance with the views herein given, the committee append to their report a series of resolutions, of which, they recommend the passage.

All which is respectfully submitted.

W. W. SEATON,
ROBERT DALE OWEN,
JOSEPH G. TOTTEN,
Committee.

Resolutions appended to Report of Executive Committee.

Resolved, That the balance on hand, standing to the credit of the chairman of the Executive Committee on the 1st of December current, together with all interest accruing to the Institution, up to the 19th of March next, to wit: the interest due on the 1st of January next, and on the 17th of February next, amounting in all to the sum of $25,646, be appropriated as follows: that is to say—

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1. To the publication of the first volume of the Smithsonian Contributions to Science, two thousand dollars; being one thousand dollars in addition to the thousand dollars appropriated for this object, by resolution of the 26th of January last.

2. To the publication of a thousand copies of a brief treatise, to be entitled "Hints on Public Architecture," heretofore authorized to be published by the Building Committee, to be illustrated with designs of the Institution buildings, &c., two thousand dollars; being one thousand dollars in addition to the thousand dollars appropriated for this object by resolution of the 5th of February last.

3. For experiments heretofore authorized to be instituted to determine the economical value of building materials throughout the United States, five hundred dollars; being the same sum appropriated for that object by resolution of the 1st of March last, but still unexpired.

4. To purchase philosophical and chemical apparatus, one thousand dollars; being a portion of the four thousand dollars appropriated for this object by resolution of the 4th of December last.

5. To part of salary of the Secretary, fifteen hundred dollars.

6. To the building fund, seventeen thousand dollars.

7. To incidental expenses and contingencies, including the expenses of the Board and its committees, sixteen hundred and forty-six dollars; or so much of that sum as may be required for these purposes.

Resolved, That during each of the four years next following the 19th of March, 1848, being the four years throughout which the unexpired term of the building contract runs, the proportion of expenditure shall be as follows: that is to say, out of the interest annually accruing to the Institution, the sum of fifteen thousand dollars, in each year, may be appropriated for the current expenses of the Institution, exclusive of all expenditures whatever properly belonging to the building fund; but including the expense of the Board and its committees; the salaries of officers, including messenger; the expense of all publications, researches, or other similar undertakings; the purchase of books and apparatus, and all incidentals whatever, not connected with the expenditure on the building, or grounds. And the remainder of the interest accruing to the Institution shall, during each of these four years, be appropriated to the building fund.

Resolved, That it is the deliberate opinion of this Board, that the entire cost of the Institution building, including the complete fitting up and furnishing of the same; lighting and heating, ventilating and draining the same; supplying the same with water; laying out in grass, and planting in trees and shrubs the lot; fencing the same, both with the present temporary fence, and the ultimate permanent one; also, all expenses for superintendence of erection, including the cost of architect's office and other incidentals; so as to cover all expenses whatever, that have been, and are to be, incurred on the building and on the lot on which it stands, until the completion of the building, and of the preparation of the lot, up to the 19th of March, 1852, shall, under no circumstances, exceed the sum expended thereon up to the first of this month, to wit: the sum of $25,000 and $17,000, by a preceding resolution appropriated to the building fund, together with the annual accruing interest over $15,000 in each of the four years next following the 19th of March next, as in a former resolution provided, and the further sum of one hundred thousand dollars, to be raised by sale of that amount of the Treasury notes, now the property of the Institution, to be sold at not less than their par value, which said sum of seventeen thousand dollars, together with said annual interest over and above fifteen thousand dollars, and said sum of one hundred thousand dollars, now invested in Treasury notes, is hereby declared to be the building fund of the Institution. And the Building Committee are hereby expressly instructed and required so to arrange their expenditures on the building and lot, including all items heretofore enumerated, that these expenditures shall not exceed the amount of the said building fund: it being understood that the said Building Committee have discretionary power in regard to such modifications and alterations as may suggest themselves, in the progress of the building, within the limits of the said building fund, but no other. And if, in order to keep within the limits of expenditure by this resolution prescribed, it shall be necessary to modify the plan as to reduce the cost of some portion of the building, the Building Committee are hereby authorized and empowered so to do.

Resolved, That the Building Committee be, and they are hereby, instructed, so to arrange the expenditures from the said building fund, that the amount paid out of it, (exclusive of any balance that may remain, on the 19th of March next, unexpended, of the sum of seventeen thousand dollars hereinbefore appropriated,) shall not, at the

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close of any one year of the last four years of the building contract, exceed an average annual expenditure, throughout the said years, of fifty-two thousand dollars, to wit: at the end of one year an expenditure of fifty-two thousand dollars; at the end of two years, an expenditure of a hundred and four thousand dollars; and so on.

Resolved, That all appropriations heretofore made by the Board, for the erection of the Institution, campus, including appropriations made on the 28th of January last, for fitting up and furnishing the building, and for lighting and heating the same; also, for laying out, and planting and fencing the campus, be, and the same are hereby, rescinded; and the sole appropriations for these objects are hereby declared to be those included in the preceding resolutions.

Resolved, That, for the present, the resolution of the Board, passed on the 4th December last, and authorizing an appropriation of twenty thousand dollars for the purchase of books, and which said appropriation is to commence from the 1st of January next, shall be strictly construed to authorize only the purchase of such valuable books of reference, as the Secretary, or the Building or Executive Committees, may consider useful for present purposes, or otherwise likely to be immediately demanded in the prosecution of the plan of the Institution: *Provided, however*, that nothing in this, nor in the preceding series of resolutions contained, shall be construed to rescind, nor in any way impair the force of, certain resolutions passed by the Board on the 26th and 28th of January last, including the following:

"*Resolved*, That for the purpose of carrying into effect the two principal modes of executing the act and trust pointed out in the resolutions herewith submitted, the permanent appropriations out of the accruing interest shall, so soon as the buildings are completed, be annually as follows: that is to say—

"First, for the formation of a library composed of valuable works pertaining to all departments of useful knowledge, and for the procuring, arranging, and preserving of the various collections of the Institution, as well of natural history, and objects of foreign and curious research, and of elegant art as others, including those of the first complete arrangement of all such collections and objects as now belong to the United States in the Museum of the Institution, when completed, together with one-half of the salary of the Secretary, the sum of fifteen thousand dollars.

"Secondly, for the preparation and publication of transactions, reports, and all other publications of the Institution, including appropriations for original researches, and premiums for original papers; for the delivery of all lectures and payment of all lecturers, and for all general expenses connected with said lectures and publications, together with one-half of the salary of the Secretary, the remainder accruing interest; it being understood that all general and incidental expenses, not specially connected with either of the above two great divisions of the plan of the Institution shall be equally divided between them."

And including also the following:

"*Resolved*, That it is the opinion and intention of the Board that, in the appropriation for the objects of the Institution of any surplus of accrued interest which may remain after the completion of the buildings of the Institution, an equal division shall be made between the two great branches; that is to say, one-half shall be appropriated to the library and museum fund, and the other half to the fund for original research, publications, and lectures; and that, in regard to all other funds hereafter to accrue to the Institution the same division be made: *And provided, also*, that the present series of resolutions shall not be construed to rescind or impair the force of a certain other resolution of the 26th of January last, passed by the Board, for the election of an Assistant Secretary to act as Librarian, and whose salary it was therein declared should commence "whenever the building is ready for the reception of the library:" *And provided, further*, that nothing in the present resolutions contained shall be construed to take from the Executive Committee the power, heretofore, to wit: by resolution of the 26th January, granted to them to make to the Assistant Secretary elect, such compensation as they may deem reasonable for services he may render from time to time, in making catalogues or performing other similar duties for the Institution."

Resolved, That there shall, hereafter, be one regular annual meeting of the Board of Regents, and no more, unless specially called according to the provisions of the act organizing the Institution; and that said annual meeting be held on the first Wednesday in January of each year: *Provided*, That the regular annual meeting for the year eighteen hundred and forty-eight shall be held on the second Wednesday in December of that year.

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In corroboration of the calculations made in the foregoing report, touching the amount which, on the scale of expenditure proposed, would be withdrawn from the original funds of the Institution, to complete the building, with its contingencies, Mr. Totten laid before the committee a table of estimates, exhibiting, by a somewhat different process, results similar to those set forth in that report.

These estimates are as follows:

Mr. Totten's Estimates.

Principal	$515,169.—Interest thereon per annum		$30,910 (a)
Treasury notes	240,000.		
Total	$755,169.		
Sum proposed to make applicable to the building			$250,000
Deduct amount which will have been expended up to 19th March, 1848			42,000
Dividing the remainder by 4 will give for the amount to be expended, each year, for four years, upon the building.		$52,000 × 4 =	208,000
But it is proposed, to expend besides, the sum of $15,000 annually, for the same period, on other objects; making expenditure per annum			67,000

Which sum may be provided for, as follows:

FIRST YEAR.

12 months interest on the principal of $515,169, (called a)		$30,910
6 " " on $240,000 of Treasury notes		7,200
22,370 " " sold at end of 6 months		22,370
6 months interest on $217,630 of Treasury notes		6,528
		$67,008

SECOND YEAR.

12 months interest on the principal (a)		$30,910
6 " " on $217,630 of Treasury notes		6,528
23,750 " " sold at end of 6 months		23,750
6 months interest on $193,880 of Treasury notes		5,816
		$67,004

THIRD YEAR.

12 months interest on principal (a)		$30,910
6 " " on $193,880 of Treasury notes		5,816
25,215 " " sold at end of 6 months		25,215
6 months interest on $168,665 of Treasury notes		5,059
		$67,000

FOURTH YEAR.

12 months interest on the principal (a)		$30,910
6 " " on $168,665 of Treasury notes		5,059
26,780 " " sold at end of 6 months		26,780
6 months interest on $141,885 of Treasury notes		4,256
		$67,005

Treasury notes sold—First year	$22,370
Second year	23,750
Third year	25,215
Fourth year	26,780
Total Treasury notes sold	$98,115

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The completion of this scheme of operations will, at the end of five years, that is to say, on the 19th of March, 1852, have afforded the following results:

The building, grounds, &c., will be complete, and everything in readiness to go into full operation on an expenditure of	$250,000
There will have been expended on other objects, in fulfillment of the purposes of the testator, the further sum of	68,500
	$318,500

The total amount of the fund, committed to the Regents, was—

Original capital	$515,169	
Accumulated interest	242,129	
		$757,298

There will remain of this fund—

Original capital	515,169	
Accumulated interest (in Treasury notes)	141,885	
		657,054
Total reduction in the original fund		$100,244

But this reduction of $100,000 has produced fruits, in accordance with the design of the trust, to the value of $818,000.

The income, after March 19, 1852, will be derived from the sum of $657,054; and will annually amount to $39,423.

The above calculations have disregarded small amounts.

By selling the Treasury notes only at the moment their proceeds are wanted, a notable amount may be saved, which has not been estimated for above.

And it may be, that other important savings may be made, by investing in other Treasury notes, all accruing interests, that may not be immediately wanted.

[NOTE.—The small variations between the results obtained through these estimates and those given in the report of the committee, rest chiefly on this, that Mr. Totten has supposed the Treasury notes sold out, on the 1st of July of each year; while in the report, they are supposed to be sold on each 1st of January.]

Mr. Owen submitted, relative to the seal of the Institution, a letter from Mr. Stabler, a letter from Mr. Peale, chief coiner of the Mint, at Philadelphia, and Mr. Stabler's account, as follows:

SANDY SPRING, 12 *Month*, 8, 1847.

R. DALE OWEN.

RESPECTED FRIEND: Thy favor of yesterday is received. I can deliver the press on the 8th, but fear it is not possible to have the stand and case ready.

I have been waiting near three months for authority to have a mahogany stand and case made, suitable, and in character with the other work; which Colonel Seaton felt a delicacy in giving, without the sanction of the other members of the committee. As thou wast not in Washington, I wrote to Colonel Totten, at Colonel Seaton's suggestion, (some six or eight weeks since,) but have received no reply.

Last week, I gave the order to have the stand and case made, and I fear it cannot be done in time to deliver by the 8th, but, if practicable, it shall be, for I would like to deliver it to the Board, collectively; it being, by far, the finest finished piece of work I ever executed, both seal and press.

The price I usually charge the United States Government for my best press, (tho' inferior in finish to this,) and a steel seal, including case, is $276.

For this, I shall charge $376, and then not be near so well paid for the time and labor bestowed in giving a correct likeness on steel.

It has not been a profitable job, nor did I undertake it with that view; but it was to furnish something that would be a credit to the country and to the arts, as well as to myself. It will last, too, for generations.

I submitted an impression to the chief coiner of the Mint, perhaps as good a judge as there is in the country, and enclose his reply, as to the value of such a die.

Annexed is my bill, receipted, as thou requests; and I also enclose a few cards for the Board to have an opportunity of seeing the proof impressions.

I am, very respectfully, thy friend,

EDWARD STABLER.

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P. S.—At thy leisure, please return F. Peale's letter. I suggested to Colonel Seaton, my putting up the press, &c., in the National Institute, until your building was ready to receive it—the key in your possession, of course. This would afford an opportunity of exhibiting the work, and most probably more to my benefit than the small profit I shall make on it. Please advise me by return of mail, if the proposition meets thy views also.

Our mail closes on the evening of the 6th, (Monday,) and I would be glad to know where it is to be delivered, before leaving home, as it will save me trouble.

E. S.

PHILADELPHIA, *November* 16, 1847.

MY DEAR SIR: Your specimen enclosed, is a beautiful piece of work. As a seal, it is, in my opinion, unequalled, and, therefore, highly creditable to your skill. I have no criticism to make, and do not think $250 unreasonable.

I am engaged on a medal, at this time, and am so much pleased with the lettering on the Smithsonian seal, that I may possibly solicit the favor of your putting in the legend and inscription.

Very respectfully,

FRANKLIN PEALE.

EDWARD STABLER, Esq.

12 *Month*, 1, 1847.

Smithsonian Institution,

To EDWARD STABLER, Dr.

For a cast-steel screw seal press, extra finish, and a cast-steel die, hardened, with portrait of James Smithson; and counter-die, stand and case, delivered in Washington city---------- $376 00

Received payment, in full,

EDWARD STABLER.

The question concerning the approval of the above account coming up for consideration, it was—

Resolved, That Mr. Stabler's account for the seal of the Institution, together with the letters concerning it, be referred to the Board of Regents.

And, on motion, the committee adjourned.

NOTE.—On the 18th December, 1847, Mr. Totten asked the Board of Regents, then in session, to be excused from further service as a member of the Executive Committee; and stated to the Board, that the time necessarily employed by him as member of the Building Committee was as much as he could spare from his professional duties.

He was excused; and Mr. Alexander Dallas Bache was elected to fill the vacancy thus created.

EIGHTH MEETING.

December 13, 1847.

Present, Messrs. Seaton, (Chairman,) Owen and Bache.

Mr. Bache submitted to the committee a report, embodying a resolution making appropriations for objects other than those to be provided for out of the building fund, for one year from the 19th of March, 1848; prepared in accordance with a resolution of the Board of Regents, passed this day.

The report, after consideration, was approved by the committee, and is as follows:

Mr. Bache, from the Executive Committee, to whom was referred a resolution of

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the 18th instant, relative to appropriations for the year commencing on the 19th of March, 1848, made the following report:

The committee, after consultation with the Secretary, recommend the passage of the following resolution.

That the appropriation for the year commencing on the 19th of March, 1848, for objects other than those provided for out of the building fund be, for the present, as follows:

For the publication of Transactions, the sum of three thousand five hundred dollars.

For computation relating to occultations, two hundred and fifty dollars.

For purchase of magnetic instruments, six hundred dollars.

For instruments and other expenses connected with meteorological observations, one thousand dollars.

For arrangement of apparatus, &c., in such portion of the building as shall be completed next autumn, one hundred and fifty dollars.

For expenses of lectures, including lighting of lecture room, five hundred dollars.

For publication of scientific reports, five hundred dollars.

For general expenses of the Institution, including salary of officers, expenses of Board and its committees, clerk-hire, postage, &c., seven thousand five hundred dollars; or, so much of each of the said sums as may, in the said year, be required.

**a*. For the purchase of books and incidents connected therewith, one thousand dollars.

And, on motion, the committee adjourned.

NINTH MEETING.

December 15, 1847.

Present, Messrs. Seaton, (Chairman,) Owen and Bache.

The Chairman submitted to the committee a report, giving a table of the expenditures of the Institution since its commencement; and recommending a resolution in regard to the seal of the Institution.

It was examined, approved, and signed by the committee, and is as follows:

Mr. Seaton, from the Executive Committee, made the following report:

The Executive Committee report the state of the funds of the Institution, on the 1st instant, as follows:

The Board of Regents have drawn from the Treasury, of accruing interest, to pay the current expenses of the Institution	$40,660 81

The disbursements from this fund have been as follows:

For expenses of Board of Regents, and its committees	$3,876 47
For materials and erection of specimen walls, and superintendence thereof	393 68
For books purchased	555 99
For compensation to architects for designs, &c	1,325 00
For recording and copying	378 98
For services of messenger	402 50
For services of Assistant Secretary	200 00
For postage	28 99
For printing	847 68
For examination of quarries, including expenses of geologist	370 76
For perspective views of Institution	200 00
For chemical examination of building materials	94 50
For expenses connected with ceremonies, &c., on the occasion of laying the foundation stone of building	185 37
For stationery	112 88
For philosophical and chemical apparatus	1,571 47

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For salary of Secretary	$1,750 00
For expense of first volume of Transactions, in part	203 58
For incidentals, including furnishings, freight, carriage, hack-hire, &c.	557 20
For surveying and recording levels of Institution grounds	112 50
For expenses of building, including superintendence	25,002 67
	$37,670 02
Balance in the hands of Corcoran & Riggs, 1st December, 1847	2,990 79
	$40,660 81

The entire amount of the funds of the Institution on the 1st instant, was $758,159.79; being $861.79 more than the amount of its funds, on the day of the passage of the act by which it was organized; and on the first of next month, there will be due of interest $15,455.

The Institution has no debts, except a few unimportant items not yet rendered, and also an account for the seal of the Institution.

In regard to this latter, the committee report that, they employed Mr. Edward Stabler of Sandy Springs, Maryland, to execute, in accordance with a resolution of the Board of the 24th February last, a seal for the Institution, comprehending the medallion head of Smithson, surrounded by the words "Smithsonian Institution." Mr. Stabler has executed the work to the entire satisfaction of the committee, and they submit to the Board a proof impression of the seal. The impression is made by a cast-steel screw press. The committee were not able to make any positive contract with Mr. Stabler, previously to commencing the work, Mr. Stabler stating that his charge would be reasonable, and in proportion to the labor expended. Mr. Stabler now charges, for the seal and press, together with stand and case, $876. The committee have not paid him, because they think the charge too high. In making it, Mr. Stabler forwarded to the committee a letter from Mr. Franklin Peale, chief coiner of the mint, Philadelphia, herewith submitted. Mr. Peale expresses the opinion, that $250 would not be an unreasonable charge. The stand and case cost $26; so that, at that rate, the entire bill would amount to $276; which the committee think a sufficient price. They report a resolution accordingly.

All which is respectfully submitted.

W. W. SEATON,
ROBERT DALE OWEN,
A. D. BACHE. } *Committee.*

DECEMBER 15, 1847.

Resolution accompanying the foregoing report:

Resolved, That the Executive Committee be authorized to pay Mr. Edward Stabler, for seal and press executed by him, together with its stand and case, two hundred and seventy-six dollars, out of any money in the treasury of the Institution not otherwise appropriated; and that the Chairman of the Executive Committee communicate to Mr. Stabler a copy of this resolution.

And, on motion, the committee adjourned.

TENTH MEETING.

December 22, 1847.

Present, Messrs. Seaton (Chairman) and Owen.

Mr. Edward Stabler appeared before the committee, and presented to them his seal and press.

The resolution of the Board of the 15th instant, was presented to him; it being in the following words, to wit:

Resolved, That the Executive Committee be authorized to pay Mr. Edward Stabler, for seal and press executed by him, together with its stand and case, two hundred and

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wenty-six dollars, out of any money in the treasury not otherwise appropriated; nd that the Chairman of the Executive Committee communicate to Mr. Stabler a opy of this resolution.

Whereupon, Mr. Stabler expressed his dissatisfaction, and his nwillingness to receive the sum of $276 in full, for his seal, press nd case; representing that the Board had misconceived the letter f Mr. Peale, relative to the value of the work; the sum of $250, n that letter mentioned, being meant by Mr. Peale to apply to the lies only, and not to the press or stand.

Thereupon, Mr. Stabler was advised to take the seal and press to he Vice-President's room, in the Capitol, where the Board would e able to inspect it, at their meeting of this evening; and was in- ormed that the matter would be again referred to the Board for heir action, and that the explanation Mr. Stabler had just made to he committee, would be, by the committee, repeated to the Board.

The chairman called the attention of the committee to a pream- le and resolution, passed by the Board of Regents, as follows, to wit:

WHEREAS, it has been intimated to this Board that, the American Sculptor, Hiram Powers, desires to make some arrangement, by which his marble statue of the Greek Slave, may obtain, at the seat of Government of his native country, a suitable tri- une in a fire-proof building, where it shall forever remain open, ultimately without harge, to his countrymen, and others visiting the metropolis; therefore—

Resolved, That the Executive Committee be, and they are hereby, authorized to ake with the said Hiram Powers, or his duly authorized agent, a contract, in regard o the procurement and safe keeping of the said statue, as follows, to wit: That the mithsonian Institution will receive, and place in a fire-proof portion of the build- ng, the said statue, in three years from this date; that it is to say, on the 15th De- mber, 1850, or such earlier date as the said statue shall be received, the Smithsonian nstitution binds and obliges itself, to keep the said statue on exhibition, and charging or a single ticket twenty-five cents; and for a season ticket, to be valid for one year, fty cents; and that they will pay over, from time to time, unto the said Hiram Powers, the gross amount of the receipts of said exhibition, without any deduction herefrom, for rent, attendance, or any other incidental expense whatever; said gross eceipts to be in full payment of the said statue, which shall thereafter remain the roperty of the Smithsonian Institution; and the said Institution binds and obliges tself, at the expiration of the said three years of exhibition of the said statue, and for- ver after, safely to keep the said statue, and to admit visitors to the same, at reason- ble times, as they are admitted to the other collections of the Institution, free of all harge whatsoever.

Resolved, That the Chairman of the Executive Committee transmit to Miner K. Kellogg, Esq., in whose charge the said statue now is, a copy of the foregoing pre- mble and resolution.

In connection with the above resolutions, the chairman submit- ed the following copy of a letter which he had, to-day, addressed o Mr. Kellogg:

WASHINGTON, *December* 22, 1847.

SIR: I am instructed by the Board of Regents of the Smithsonian Institution, to nclose to you a copy of a preamble and resolution, relative to the statue of our coun- ryman, Mr. Powers, now in your possession.

I have not had an opportunity of seeing the "Greek Slave," but from the current estimony of the press and of men of taste, who have inspected it, I have formed so igh an opinion of the merits of the work, that it will afford me sincere gratification

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should Mr. Powers see fit to make with our Institution a contract, upon the terms proposed by the Board.

Mr. Owen, Chairman of our Building Committee, informs me that he has written to you on the subject, and especially in regard to the particular location proposed for the statue. In case we obtain it, I have only to add that, the Executive Committee holds itself prepared, at any time, to execute with Mr. Powers, or his authorized agent, a contract, in accordance with the terms of the enclosed resolution.

I am, sir, your obedient servant,

W. W. SEATON,
Chairman Executive Committee, Smithsonian Institution.

MINER K. KELLOGG, Esq.

And, on motion, the committee adjourned.

NOTE.—On the 13th December, Mr. Owen asked to be excused from serving as a member of the Executive Committee; stating to the Board, that the most important duties of this committee would hereafter be, to select among various scientific objects and researches, those to which appropriations should be made; and that there were gentlemen on the Board, not members of this committee, particularly a Regent from Washington, better qualified than himself, to make such selection. He was not excused.

On the 22d December, Mr. Owen renewed his application to be excused from service on the Executive Committee; stating to the Board that, if in accordance with the tenor of a resolution heretofore passed by the Board, he should be re-elected Regent, his duties as Chairman of the Building Committee would occupy much of his time; especially as there had been referred to him, by that committee, the preparation of the manuscript of the work on "Public Architecture," with the publication of which they had been charged by the Board.

Mr. Owen was excused; and Mr. Pearce was elected to fill the vacancy thus created.

ELEVENTH MEETING.

December 23, 1847.

Present, Messrs. Seaton (Chairman) and Bache.

The following resolution, passed yesterday by the Board, on the subject of a communication of Mr. Stabler's, relative to his seal and press, was laid, by the chairman, before the committee.

Resolved, That Mr. Stabler's communication be referred to the Executive Committee, with power to increase the compensation, if they deem it just, within the limits of the account rendered.

Whereupon, on motion of Mr. Seaton—

Resolved, That Mr. Bache be requested to cause Mr. Saxton to examine Mr. Stabler's press and seal, and to give his opinion as to its value.

And, on motion, the committee adjourned.

TWELFTH MEETING.

December 23, 1847.

Present, Messrs. Seaton (Chairman) and Bache.

Mr. Bache reported to the committee, that Mr. Saxton had examined the seal and press of Mr. Stabler; and, considering it a work of the highest artistic skill and beauty of execution, was of

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opinion, that the price charged by Mr. Stabler, to wit: the sum of $376, was, in fact, less than its fair value.

Whereupon, on motion of Mr. Bache—

Resolved, That the chairman be authorized to pay Mr. Stabler the full amount of his bill.

And, on motion, the committee adjourned.

THIRTEENTH MEETING.

January 8, 1848.

Present, Messrs. Seaton (Chairman) and Bache.

The chairman laid before the committee the following reply, from Mr. M. Kellogg, to the letter addressed by him (the chairman) to Mr. Kellogg, under date the 26th ultimo, relative to Power's statue of the Greek Slave:

BOSTON, *July* 17, 1848.

W. W. SEATON, Esq.

DEAR SIR: On the 19th May last, I wrote to Robert D. Owen, Esq., an answer to an inquiry of his, relative to the "Greek Slave," for the Smithsonian Institution, in which I said that I could not bind Mr. Powers to accept the offer of the Institution on account of the difficulties which Mr. Robb, of New Orleans, had thrown in the way of Mr. Powers, &c., &c.

These difficulties having been settled, I hasten to say to you that, it will give me the greatest pleasure to make the final arrangements necessary to the acceptance of the terms contained in the proposal of the Board of Regents. I shall stand ready to deliver the statue of the Slave, now in my possession, (or another one which Mr. Powers may execute hereafter,) into the possession of the Institution, within eighteen months, (or by the time the tower shall be finished, and ready for its reception, after that time,) according to the terms mentioned in the resolutions and proposals of the Board of Regents.

Whenever my services are required in assisting the architect, in his designs for the room in the tower, please let me know, and I will be happy to render them.

I know that Mr. Powers feels highly gratified at the liberal offer you have made to him; and could I lay my hands upon his letter, expressive of his feelings, I would transcribe what he says.

Please accept the assurance of my esteem, and excuse haste.

MINER K. KELLOGG.

FOURTEENTH MEETING.

February 8, 1848.

Present, Messrs. Seaton (Chairman) and Bache.

The Secretary read a letter from Professor Jewett, Assistant Secretary of the Institution, in regard to compensation for past services to the Board of Regents.

Whereupon, it was—

Resolved, That the Board of Regents, having authorized the Executive Committee to make to the Assistant Secretary, acting as Librarian, a suitable compensation for his past services in advising the Building Committee, and in communicating information required by committees, and for his expenses in visiting Washington and New York, on business of the Institution, the committee hereby authorize and direct

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the Secretary to pay to the Assistant Secretary, for past services and expenses, the sum of two hundred and fifty dollars.

And, on motion, the committee adjourned.

FIFTEENTH MEETING.

March 14, 1848.

Present, Messrs. Pearce and Bache.

The Secretary made report of several scientific communications he had received, and presented among the number a sealed packet from Professor Schaeffer, of Danville, Kentucky, relative to chemistry.

Also, of the unpacking of the apparatus received from Paris, the articles of which being found generally in a good condition have been disposed of in a room in the Patent Office.

Also, of the publication and distribution of the copies of the table of occultations, for the year 1848, and the reception of a number of letters commendatory of the plan of this publication.

Also, of the reception of several articles of natural history for the museum, which were put in charge of Mr. Peale to be preserved.

Also, a letter and papers from Professor Jewett, recommending a plan for the collection of the books presented to the Institution, under the act of Congress establishing the Institution. All of which, on motion, were referred to the Library Committee of Congress, through Mr. Pearce.

The Secretary also presented a letter from Mr. Prince, of Flushing, making a proposition for the planting of American forest trees in the grounds of the Institution; which, on motion, was referred to the Building Committee.

And, on motion, the committee adjourned.

SIXTEENTH MEETING.

May 19, 1848.

Present, Messrs. Seaton, (Chairman,) Pearce and Bache.

On motion, it was—

Ordered, That the Secretary be requested to obtain an engraving, or cut, of the head of Smithson in the medallion form, to be printed on the title page of the books published by the Institution, and to form part of the title.

Mr. Pearce reported, that the letter from Professor Jewett, referred to in the minutes of 14th March, had been laid before the Library Committee of Congress, and that the committee had determined to report a bill, amendatory of the law, in regard to the

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receipt of copy-right books by the Library of Congress, and the Smithsonian Institution.

Ordered, That 250 copies of the Senate document, containing the report of the Regents to Congress, (for 1847,) and 250 copies, in addition, of the report of the Building Committee, be obtained, by the Secretary, for the use of the Regents.

Ordered, That the chairman of the committee and the Secretary of the Institution, be a sub-committee, to have the report of the Secretary (for 1847) printed for the use of the Regents.

The Secretary laid before the committee a proposal from Dr. Hare, to present to the Smithsonian Institution his collection of chemical and physical apparatus on certain conditions, in reference to repairs and placing the instruments; which, on motion, was referred to a sub-committee, composed of Mr. Bache and the Secretary, who were instructed to have an interview with Dr. Hare, and ascertain, precisely, the terms on which the apparatus will be presented.

And, on motion, the committee adjourned.

SEVENTEENTH MEETING.

July 6, 1848.

Present, Messrs. Seaton, (Chairman,) Pearce and Bache.

The Secretary reported progress in regard to obtaining an engraving of the head of Smithson, and procuring the apparatus of Dr. Hare.

Also, the condition of the first volume of the Smithsonian Contributions to Knowledge, and the printing of the copies of the programme and Secretary's report.

The Secretary reported that he had published an ephemeris of the planet Neptune, by Mr. S. C. Walker, for distribution among astronomers.

The Secretary communicated a proposal from Mr. Stevens to make a catalogue of books relating to America, prior to 1700.

Also, his intention to advance sums of fifty dollars, from time to time, as might be necessary, to Professor Spencer F. Baird, to enable him to have drawings made of researches in embryology of reptiles and fishes, as recommended by Dr. J. S. Morton, of Philadelphia, and Professor S. S. Haldeman, of Columbia, whose opinions were asked by the Secretary.

The payment of Thomas Berry's bill, for cartage of stone for specimen walls, &c., $12; and James Reily, for digging to ascertain nature of soil for foundations, $1, was ordered.

And, on motion, the committee adjourned.

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EIGHTEENTH MEETING.

August 10, 1848.

Present, Mr. Seaton, (Chairman); and, by invitation, Mr. Marsh, Colonel Totten, and Colonel Davis.

The Secretary presented the following subjects for consideration and advice, viz:

First. A proposition of Mr. G. Nye, to sell a collection of pictures of the old masters to the Institution; which purchase was not regarded as coming within the authority of the committee.

Second. Request of Mr. Skinner, that the Institution purchase of him the Farmer's Library, (three volumes,) and Journal of Agriculture, (three volumes); which was agreed to.

Third. First volume of Contributions through the press; can be bound in cloth for 35 cents per volume. (It was ordered that they be so bound.)

Fourth. Proposed to distribute the volume—first, to colleges; second, to learned societies; third, to certain individuals.

On motion—

Resolved, That the distribution be left to the discretion of the Secretary.

Fifth. Proposed to send circulars with the volumes, asking colleges and institutions for catalogues of libraries, histories, and other documents relative to institutions.

Sixth. Second volume of contributions will probably be commenced in the course of the present year. Professor Jewett will superintend the press.

Seventh. Proposition of Mr. Stevens to prepare a bibliographical account of all books relative to America, previous to 1700; to be published as a part of the Smithsonian Contributions to Knowledge.

The Secretary read answers to letters which he had addressed to different individuals on the subject. These answers were highly commendatory of the plan.

The Secretary had given opinion that the work would be adopted for publication after having been approved by a commission appointed to examine it.

Eighth. Dr. Hare had unconditionally presented his apparatus to the Institution. The Secretary had employed workmen to polish, repair, and pack the same. The articles will fill a canal boat.

Ninth. Proposition to purchase from Dr. Hare a complete set of "Annales de Chimie," to accompany the apparatus. Agreed to.

Tenth. Proposition to pay Dr. Hare's expenses when in Washington, he having come on to meet the committee. Expenses about twenty dollars. Agreed to.

Eleventh. The Secretary reported that Mr. Trist had presented the paper-holding press, which he employed in his agency to Mexico. A very convenient article, and very acceptable, independently of its historic associations.

Twelfth. Also, that Mr. Irwin had presented a bust of Thorwaldsen, in bronze, two volumes of Etchings, and a pamphlet by Professor Abraham, of the University of Copenhagen. Also a copy of a rare edition of the Bible.

Thirteenth. The Secretary gave an account of the progress of the system of meteorology. Mr. Espy has been re-appointed United States Meteorologist—agreement with him to co-operate with the Institution. The Secretary of the Navy had agreed to assign Mr. Espy to the direction of the Institution.

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Arrangements made to send sets of meteorological instruments to California; also, one to Bent's Fort, another to Santa Fé.

Fourteenth. Proposition of a topographical exploration of the mountain chains of the United States, and to collect the results of all the canal and railroad explorations. Considered an interesting and important object.

Fifteenth. The Secretary reported that he had procured the seal for the title page of the publications of the Institution, and exhibited a copy.

Also, the following motto from the manuscript of Smithson:

"Every man is a valuable member of society who, by his observations, researches, and experiments, procures knowledge for men."

Mr. Marsh presented a letter from ——— ———, offering to sell to the Institution a collection of shoes, illustrative of the changes in the form of this article of dress.

The purchase was declined; the articles would be accepted as a gift.

The report of the Secretary was accepted.

And, on motion, the committee adjourned.

NINETEENTH MEETING.

December 11, 1848.

Present, Mr. Seaton, (Chairman,) Mr. Bache, Mr. Pearce, and the Secretary.

The Secretary gave an account of the following transactions since the last meeting.

The Secretary stated, that during the recess he had given an account of the programme of the operations of the Institution to the Historical Society of New Jersey, and to the American Association for the Advancement of Science. The programme has been received with general approbation, and will, in the Secretary's opinion, be approved of, when it becomes generally known, by every reflecting mind.

The first volume of the Contributions had been completed, and was in process of distribution.

The binding, on account of the difficulty of getting cloth of the proper color, and the use of an impression of the head of Smithson on the back, would cost forty-two cents per volume, instead of thirty-five cents.

Professor Jewett had been engaged to assist in distributing the copies.

A circular had been prepared to accompany the copies as distributed, asking the publications of the Institutions to which the

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volume was sent in exchange. Also, an expression of opinion and suggestions relative to the programme adopted.

A circular had been prepared by Professor Jewett, and had been sent to the same institutions for the purpose of collecting statistics as to the several libraries in this country. Answers to these are now received daily.

The copies of the first volume of the Contributions had been deposited for safe-keeping in the Custom House in New York. The Secretary of the Treasury, Mr. Walker, readily granted a room for this purpose, on application of the Secretary of the Institution.

The Computation of Occultations.—With the advice of Dr. Bache, the Secretary had ventured to order the computation of a set of tables of occultations similar to those published last year, for the year 1849. These will be of great importance to the officers of the General Government who may be engaged on the boundary surveys of the new possessions of our country; and indeed it would be but just if the Government were to pay part of the expense of the publication of these tables. The computations include occultations visible over nearly the whole of North America, and it is presumed the committee will not think three hundred dollars too large a sum to be paid Mr. Downes for the labor of the calculation of these tables, when it is stated that it has occupied his whole time, at the rate of eight hours a day, for six months, with the almost constant assistance of his wife. In order to insure accuracy, and that there might be stricken off extra numbers, the tables have been stereotyped. The distribution of the pamphlet on occultations has been commenced.

Meteorology.—The Secretary of the Navy has officially directed Professor Espy to call upon the Secretary of the Smithsonian Institution for direction as to his meteorological labors. In connection with Mr. Espy a circular has been addressed to all persons who would probably be disposed to take part in the contemplated system of observations. Six sets of barometers and thermometers have been compared with a standard, and forwarded by the steamer "Panama" to the coast of Oregon and California. Also, a set has been prepared for Bent's Fort, and another for Santa Fé. The workman has unfortunately disappointed the Secretary in getting the latter ready in time to send by Mr. St. Vrain. The Secretary acknowledges his obligation to Professor Coffin, of Lafayette College, for a very extensive list of observers, extending over the entire American continent.

Second Volume of Contributions.—A number of memoirs have been

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received. One on the Zodiac of the Asteroids, by Professor Hubbard, of the National Observatory; another, an account of a new comet discovered by an American lady, written by herself; another on the affinity of the Sanscrit and Chinese languages. Also several memoirs have been proposed, and are now in process of preparation. One by Professor Curley, giving an account of Georgetown Observatory, of the instruments with which it is furnished, and of the observations which have been made by means of it; another by Professor Agassiz, on the Cetacean remains found on this continent. Professor Agassiz has also, in connection with Mr. Redfield, engaged in the preparation of the drawings for an extended memoir on the Fossil Fish of North America, which he wishes to present for publication in the Smithsonian Contributions.

Dr. Hare's Apparatus.—The apparatus presented by Dr. Hare is now deposited in one of the basement rooms of the Smithsonian building. In order to transport it from Philadelphia, a vessel was chartered, and inasmuch as articles of comparatively little value did not in this way increase the cost of transportation, many were brought on, which would not otherwise have been worth the cost; though they may be found of use in many cases of original research. It is proposed not to open these instruments until an arrangement can be made for repairing and placing them in their proper cases.

Apparatus to be loaned to Lieutenant Gilliss.—Congress, at the last session, made an appropriation for astronomical observations under the direction of Lieutenant Gilliss on the parallax of the planets, in an observatory established on the coast of Peru. The appropriation, ($5,000,) however, was unfortunately not sufficient to pay the outfit and to purchase all the necessary instruments. Under these circumstances Lieutenant Gilliss applied to the Smithsonian Institution for aid, and, after consultation with the Executive Committee informally, the Secretary had concluded to order an instrument in the name of the Institution, and to loan the same to Lieutenant Gilliss on condition that the payment be not required under three years from next March, and the Institution to have proper credit for its share in the expense of the expedition. It is probable, however, that Congress may be induced to make a further appropriation, and that the Institution will not be called upon to pay for the instrument. The region in which the observatory is located is one frequently visited by earthquakes, and since every fact which can be learned with reference to this phenomenon is of importance, the

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Secretary, with the advice of Dr. Bache, added an instrument to be loaned to Lieutenant Gilliss for observations on the intensity and direction of the earthquake wave. An order has been sent to Europe for the construction of the article.

The committee sanctioned the expenditures for scientific purposes referred to in the report of the Secretary.

An application, for the purchase of the collection of minerals, precious stones, and ores, belonging to the late British Minister, from Francis Markoe, Jr., was laid before the committee by the Secretary, who was requested to decline the purchase in suitable terms.

The application of Mr. John Downes, of Philadelphia, in reference to the preparation and printing of astronomical tables, was referred to Professor Bache and the Secretary.

On motion, the committee adjourned.

TWENTIETH MEETING.

February 6, 1849.

The Executive Committee met at the Vice-President's room.

Present, Mr. Seaton, (Chairman,) Mr. Pearce, Mr. Bache, and the Secretary.

The Secretary presented the following papers, referred to the committee and the Regents:

1. A memorial from Mr. Disturnell, of New York, relating to an appropriation by the Government for collecting statistical information relating to North America; which was laid on the table.

2. A letter from F. Markoe, Jr., offering certain articles of natural history belonging to the estate of H. S. Fox, Esq., late minister from Great Britain. The Secretary was requested to inform Mr. Markoe that the funds of the Institution will not, at present, allow the purchase of specimens of natural history.

3. A letter from Mr. E. G. Squier, and Dr. E. H. Davis, in relation to the books directed by the Board of Regents to be distributed to them. And the Secretary was requested to furnish one hundred copies of the volume of Contributions, containing their memoir, to each of the authors.

4. The application of P. A. Browne, Esq., of Philadelphia, for a subscription to a work on "Hair and Fur," was referred to the Secretary.

The Secretary stated that a portion of the building would soon be ready for occupation, and asked instructions in regard to supplying a watchman, and was requested to confer with the Building Committee thereon.

The subject of providing lecturers for the present season was referred to the Secretary.

Mr. Seaton submitted to the committee an account, by Peter Gorman, for alleged services; which was laid upon the table.

On motion, the committee adjourned.

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TWENTY-FIRST MEETING.

March 12, 1849.

The Executive Committee met at the Vice-President's room this day.

Present, Mr. Seaton, (Chairman,) Mr. Marsh, (by invitation,) Mr. Pearce, Professor Bache, and the Secretary.

The minutes of the last meeting were read.

The Secretary laid before the committee the certificates of United States stock, obtained in exchange for Treasury notes, issued in the name of the Chancellor and Secretary of the Smithsonian Institution, and their successors; and requested direction in regard to the safe-keeping of the same. It was concluded that the certificates might be placed in the safe of the Secretary of the Senate.

The certificates are as follows: Twenty-two notes, of ten thousand dollars each; and two notes, of three thousand dollars each; the numbers of which are, to wit: 708, 709, 710, 711, 712, 713, 714, 715, 716, 717, 718, 719, 720, 721, 722, 723, 724, 725, 726, 727, 728, 729, each of ten thousand dollars; and 924 and 925, each of three thousand dollars; making a sum total, of $226,000.

The Secretary was requested to present, at a meeting of the committee to-morrow, a statement of the advances required for the next quarter, in conformity with the appropriation of the Board of Regents.

Resolved, That Mr. Garrigue, who has been authorized to purchase certain books for the Smithsonian Institution, by the Committee of the Library, be informed that he may draw on the Chairman of the Executive Committee for five hundred dollars, at ten day's sight, when the books are shipped.

The Secretary reported that he had delivered to Messrs. Squier and Davis the copies of the first volume of Contributions ordered to be presented to them.

The Secretary was instructed to make a compensation of fifty dollars to Miss Maria Mitchell, for the paper presented by her to the Smithsonian Institution on the "Telescopic Comet," discovered by her in 1847.

The Secretary informed the committee that the building, on account of unfavorable weather, had not yet been put into a state fit for occupation.

Also, that he has directed the publication of a map of the northern stars, on which to record observations of the Aurora, and that, in connection with this, he had issued a circular of instructions as to the method of observing this meteor.

That about two hundred persons had signified their willingness to

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co-operate in meteorological observations, and that blank forms, copies of the plan of organization of the Institution, and instructions relative to the Aurora, had been sent to these observers.

That the distribution of the first volume had been continued, and that in some cases, in the newer States, copies had been sent to academies where no colleges exist.

That he had received a number of communications for the Smithsonian Contributions to Knowledge intended for the second volume.

The Secretary presented a letter from Lieutenant Gilliss, containing the following communication from the Secretary of the Navy, relieving the Institution from payment for instruments ordered for the use of the astronomical expedition: (See Nineteenth Meeting.)

"You will be pleased to inform the Regents of the Smithsonian Institution, that the appropriation made by Congress, in the act approved the 26th of January ultimo, will enable the Department to pay for the instruments which, at your request, they permitted you to order on their account. The instruments, on such payment being made, will be subject to the control of this Department, as other property of the United States under its direction."

On motion, the committee adjourned.

TWENTY-SECOND MEETING.

March 14, 1849.

The Executive Committee met this day, in the Vice-President's room.

Present, Mr. Seaton, (Chairman,) Mr. Pearce, Professor Bache, and the Secretary.

The Secretary laid before the committee a statement of expenditures, up to date, and the following estimate of funds, required to the 1st of April:

For building purposes, as per estimate of architect, say	$5,000
Salary of Architect and Superintendent, for one-quarter	750
General purposes of the Institution to meet appropriations, salaries for the quarter, and contingencies	4,250
	$10,000

The following resolutions, presented by Professor Bache, were adopted:

Resolved, That the Executive Committee will, at the meetings after the close of each quarter, pass upon the requisitions to be made for funds, for purposes of the building and of the Institution for the next quarter.

Resolved, That all accounts for expenditures made will be audited by the Committee at its monthly meeting.

Resolved, That the Secretary be requested to present to the committee, at each

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monthly meeting, a statement of the expenditures for the month preceding, of the state of the appropriations, and of the amount required, according to the quarterly estimate, for the service of the next month, and, quarterly, the estimate of the architect for the building, and estimates for the general purposes of the Institution, in conformity with the appropriations of the Board of Regents.

Resolved, That to meet the demands of the building, and general purposes of the Institution, according to the estimate presented by the Secretary, to April 1st, a requisition be drawn on the Chancellor and Secretary, for the sum of ten thousand dollars, (in stock of the United States,) the proceeds to be deposited to the order of the Chairman of the Executive Committee.

A letter was laid before the committee, by the chairman, from Peter Gorman, in relation to a claim for services rendered in visiting quarries.

On motion, the chairman was requested to require evidence from Mr. Gorman, that he was promised compensation by the Building Committee, in addition to his expenses which have already been paid.

On motion, the committee adjourned.

TWENTY-THIRD MEETING.

April 6, 1849.

The Executive Committee met this day, in the Vice-President's room.

Present, Mr. Seaton, (Chairman,) Mr. Bache, and the Secretary.

The Secretary made the following statement, relative to transactions, &c., viz:

First. Professor Kœppens, late of Athens, had given in behalf of the Institution, a course of four lectures, which had been attended by a large and apparently interested audience. On account of the difficulty of approach, at present, to the Smithsonian building, these lectures have been delivered in Carusi's saloon.

Second. At the request of the Secretary a set of apparatus, to illustrate the principles of wave-motion, had been constructed, under the direction of Professor Snell, (of Amherst,) the inventor; that a part of this apparatus had arrived, and that the remainder was in Boston, awaiting transportation; also, that the thanks of the Institution had been presented to Professor Snell for his superintendence.

Third. A package of thermo-electrical apparatus, with a set of galvanometers for electricity of different intensities, had been received from Paris, from the workshop of Mr. Ruhmkorff, the same having been ordered, and paid for by a remittance made about two years ago.

Fourth. A barometer and thermometer had been given in charge of Lieutenant Woodbury, of the corps of engineers, for observations at Fort Kearney, on the river Platte.

Fifth. Four thermometers had been sent with suitable instructions for meteorological observations to missionary stations around Lake Superior in charge of Dr. Owen.

Sixth. The instruments for observations on the intensity of terrestial magnetism had been given in charge to Colonel Emory, of the Mexican Boundary Survey, to be used in accordance with the purposes for which they had been purchased.

Seventh. It is probable that the United States Government will finally pay for these instruments, and thus leave the magnetic appropriation free for the purchase of another set to be used by other observers.

Eighth. Steps had been taken to procure fifty barometers to be placed along the telegraphic lines for observations on the progress of storms.

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Ninth. That a paper had been received on a mathematical subject for the next volume of Smithsonian Contributions to Knowledge, which is now in progress of examination.

Tenth. A proposition had been made to prepare, at the expense of the Institution, another ephemeris of the planet Neptune, which met the approval of the Secretary.

Eleventh. Papers of this kind will be issued at all times, without delay, as it had been proposed to publish the volume of Contributions in parts, each separately paged and numbered.

The Secretary stated the necessity of constructing a number of additional seats, for the accommodation of a large audience, in the lecture-room of the east wing of the Smithsonian building. Agreed to, and estimates recommended.

That the public authorities of the city of Washington be solicited to construct a foot bridge across Tenth street, and improve the footway to the Smithsonian building; which was referred to Mr. Seaton.

The Secretary presented an estimate for the present quarter to July 1st, for building, from the Architect, and general expenses, amounting to $30,100; which was approved, viz: $24,000 for the building, and $6,100 for general expenses.

Bills Nos. 340 to 356 inclusive were examined and passed.

The Secretary laid before the committee the circular of the American Academy, of Boston, in relation to the continuance of the Observatory at Altona, and the Astronomischen Nachrichten, under Professor Schumacher.

Resolved, That the Secretary be requested to express to Professor Schumacher the views of the Executive Committee on the importance of the services rendered by the Altona Observatory, as a centre of astronomical research, and the Astronomischen Nachrichten, as a means of diffusing astronomical information throughout the world, and their earnest hope for the sake of the progress of Astronomy that both will be continued.

On motion, the committee adjourned.

TWENTY-FOURTH MEETING.

June 27, 1849.

The Executive Committee met at the Mayor's office.

Present, Mr. Seaton, (Chairman,) Mr. Bache, and the Secretary.

The Secretary made the following statement, relative to the operations since the last meeting of the committee:

First. The east wing of the building was taken possession of, for the uses of the Institution, the 10th of April, the upper rooms of the east range being temporarily occupied by the Librarian, and those over the laboratory, in the wing, by the Secretary. Subsequently he removed to the lower rooms of the range, which he now occupies.

Second. Dr. Hare's apparatus has been unpacked, and found in tolerably good condition—the breakage not considerable. A large box, principally of brass articles of

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this apparatus, has been sent to Chamberlain, of Boston, to be repaired, cleaned, and lacquered. The Institution is bound, by the terms of acceptance of the gift, to have the apparatus put in good order.

Third. In order to fit up a workshop in the basement of the building, the Secretary has purchased of the executors of the late Dr. Jones a lathe, and a lot of tools, for working in wood and metal, the cost of which was fifty dollars. He has also procured a portable forge and bellows, from Philadelphia, at a cost of twenty-six dollars.

Fourth. The apparatus mentioned at the last meeting, as having been received from France, has been unpacked, and all the Galvanometers found broken. The Secretary has written to Paris, complaining of the imperfect packing, and directing new parts to be sent, half of the cost of which to be at the expense of the maker. He has since, however, learned that most of the articles can be repaired at a suitable cost in this country.

Fifth. Dr. Hitchcock, President of Amherst College, accepted the invitation to give a course of lectures, on Geology, for the Institution. He commenced on Monday, the 30th of April, in the lecture-room of the east wing, and lectured on each alternate evening, Sunday excepted, until his course of six lectures was finished. The lectures increased in interest, and the room was found entirely too small to contain the number of persons that came. One hundred and fifty dollars was paid for the course; a sum scarcely more than sufficient to defray the expenses of the lecturer.

Sixth. To accommodate the audience, a number of extra moveable benches was ordered with the consent of two of the members of the Executive Committee. These are now deposited in the basement of the building, and will be found of use in the future meetings of the Institution.

Seventh. Also, for the convenience of those who attended the lectures, a walk was constructed from the east gate of the Smithsonian grounds to the paved side-walk on Seventh street; also, the path from the Twelfth street bridge to the building was repaired. These improvements were ordered after consultation with the Chairman of the Executive Committee.

Eighth. Dr. Hitchcock having intimated that a series of interesting geological explorations could be made on the remains of ancient sea-margins, existing in our country, provided a small appropriation were made by the Institution, the Secretary had informed him that he thought one hundred dollars could be appropriated for that purpose. The Secretary had also authorized Professor Baird, of Pennsylvania, to draw on him for funds to the amount of seventy-five dollars, for collecting, packing, and transporting specimens of natural history for the Institution.

Ninth. The meteorological observations continue to improve. We have now upwards of one hundred observers to whom the minor publications are sent. Blank forms and four thermometers have been forwarded to the missionary stations in the vicinity of Lake Superior. Two barometers and two thermometers have been also sent with Major Stansbury to establish meteorological observations in the Rocky Mountains.

Tenth. The Regents of the University of the State of New York have made an appropriation for meteorological instruments, and have given the superintendence of their construction to the Smithsonian Institution.

Eleventh. The Secretary had petitioned the telegraph companies for the use of the telegraph for meteorological purposes, and he had received the assurance of the president of the lines north of Washington, that every necessary facility, free of cost, would be afforded the Institution in the prosecution of the above-mentioned object. The Secretary had not as yet received an answer from the directors of the southern line, though his petition was presented two months ago. The president of the company will be in this city in a few days, and will then, the Secretary is informed, give an answer.

Twelfth. It is proposed to furnish the most important stations between New Orleans and the northern part of Maine, with meteorological instruments, and for this purpose, as well as for the use of the Regents of the University of New York, fifty barometers and as many thermometers have been ordered from Green, of Baltimore.

Thirteenth. A number of standard meteorological instruments have been ordered from London; a box of them is now in the Custom House in New York.

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Fourteenth. The Secretary has engaged the services of Dr. Foreman, late Professor in the Medical Department of the Washington University, of Baltimore, to take charge of the meteorological department, and to assist in the business of the Secretary. The business has so increased that nearly the whole time of this gentleman is occupied from eight o'clock in the morning until six in the evening. Half of his salary, for meteorology, will be paid by the Secretary of the Navy, and the other half by the Institution.

Fifteenth. The Secretary has also been obliged occasionally to employ help in moving, unpacking, and cleaning apparatus. Mr. McPeak is not able to do all that is required of service of this kind, and at the same time to do the errands of the Institution.

Sixteenth. Professor Jewett has entered fully on his duty in charge of the library, and has also assisted in the duties of the Secretary, particularly in making out a list of learned societies, libraries, &c., for the presentation of the Smithsonian publications, and in distributing the first volume of the Contributions. An account of his operations will be rendered at the next meeting.

Seventeenth. Two hundred and fifty copies of the "Hints on Architecture" have been received from the publisher. By the terms of the agreement, five hundred copies, less twenty-five, are to be delivered to the Institution now, and five hundred, less twenty-five, after the sale of one thousand. The two parcels, of twenty-five each, are to be presented to the architect.

Eighteenth. The Ephemeris of Neptune, an appendix to the second volume of Smithsonian Contributions to Knowledge, has been published and distributed to astronomers. The remainder of the edition is deposited in the building to be issued with the second volume.

Nineteenth. The Building Committee of the Washington Monument had informed the Secretary that the furniture of the office now occupied by them would be paid for by them. This room was originally furnished for the use of the Institution.

Twentieth. The Chancellor and Secretary had sold, for the use of the Building Committee, in accordance with the resolution of the Board of Regents, on the 17th April, 1849, sixteen thousand dollars of United States stock, belonging to the Institution, at 10 per cent. advance, less ¼ per cent. commission. Certificates to the amount of two hundred and ten thousand dollars yet remain unsold.

Twenty-first. The Secretary had sent fifty dollars to Miss Mitchell, of Nantucket, as a premium for her discovery of the comet, known by her name, and had received in return a letter expressing the gratification of the lady, and her thanks to the Regents of the Institution.

Twenty-second. The expenditure on the building for the month of April, 1849, was $38,000.

Twenty-third. Fifteen hundred extra copies of the annual report had been printed for the use of the Institution. Extracts and explanations were given in these extra copies, in order to render this publication an epitome of all the operations of the Institution up to the present time.

Twenty-fourth. The Secretary, under the instructions of the Regents in 1847, had ordered a set of pneumatic apparatus from N. B. Chamberlain, of Boston. These have been delivered by the maker, and were now put up in the Institution. Most of the articles were of new patterns, constructed for the Smithsonian Institution, and are of superior workmanship.

Twenty-fifth. A number of memoirs have been received for examination as contributions to knowledge. Some of these have been accepted, others withdrawn, and others remain under consideration.

The Secretary informed the committee that he had received a communication from Lieutenant Lefroy, superintendent of the Toronto Observatory, urging the Institution to procure a photographic self-registering declination magnetometer, which may be purchased at an inconsiderable expense, and which would be of

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much importance with the observations making at Toronto, and elsewhere, in recording the changes of the direction of the needle.

On motion—

Resolved, That the Secretary be requested to procure such an instrument, to be paid for out of any unappropriated funds.

Owing to the absence of Mr. Bradley, the clerk of the committee, no accounts were presented to be audited at this meeting.

TWENTY-FIFTH MEETING.

December 21, 1849.

The Executive Committee met in the east wing of the Smithsonian building.

Present, Mr. Seaton, (Chairman,) Professor A. D. Bache, the Chancellor and Secretary.

The Chairman laid before the committee a number of accounts, which were audited.

The Secretary made the following statements, relative to the operations of the Institution, since the last meeting of the Executive Committee:

A meeting of the establishment had been held in the Institution, at the call of the President of the United States, at which the following gentlemen were elected Honorary Members: Benjamin Silliman, Albert Gallatin, Robert Hare, and Washington Irving. These gentlemen have signified their acceptance, with the exception of Hon. Albert Gallatin, whose illness and subsequent death probably prevented his doing the same.

Since the last meeting of the committee, stock to the amount of $10,000 had been sold, for the purposes of the building, and there now remained on hand $200,000.

Distribution of the First Volume.

As far as we have been advised, the first volume of Contributions has been well received; and we shall obtain in exchange more volumes than we sent.

The second volume of Contributions is now in the press, and will contain the following memoirs, which have been submitted for examination, and accepted for publication, to wit:

1. A memoir, from Sears C. Walker, on the planet Neptune.
2. A memoir on Cubic Equations, by Dr. Strong.
3. A memoir on the Discovery of a Comet, by Miss Mitchell.
4. A memoir on Detonations and Explosions, by Dr. Hare.
5. A memoir on the Physical Geography of the United States, (Part I,) by Charles Ellet, Jr.
6. A memoir on Electrical Rheometry, by Professor Secchi.
7. A memoir on the Mosasaurus, by Dr. W. Gibbs.
8. A memoir on the Ancient Monuments of the State of New York, by E. G. Squier.

A number of memoirs are in progress of preparation, which will probably more than complete the second volume. It has been determined to publish each memoir separately, with subordinate title and separate paging.

An elaborate report has been received, from Professors Salisbury and Gibbs, on a paper submitted to them, relative to the affinity of the Sanscrit and Chinese languages. This memoir was not accepted. A copy of the same memoir had been previously sent to the American Oriental Society, by mail, but it failed to reach its destination, and nothing could be learned concerning it, either at the post office of

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Washington or Boston, and the Secretary had been obliged to apply to the author for another copy; for the transcribing of which $20 had been paid. To avoid a similar occurrence in future, the plan had been adopted of sending the memoirs prepaid by express, care being taken to obtain a receipt from the express line for the same.

Meteorological observations—good progress is making in these, though considerable delay has been experienced in obtaining proper instruments. We have decided upon the form of the barometer and thermometer, wind, snow, and rain gauges. Mr. Green, formerly of Baltimore, now of New York, has been employed to construct them, and to compare them with the standard procured from London. Pike & Son, of the same city, are engaged in constructing the other instruments named. Twenty-five sets of these have been purchased by the State of New York, and are now in progress of distribution under the direction of Professor Guyot. The midland department of the army has agreed to purchase instruments of the same kind for all the new military posts. So that with those which shall be procured at the expense of the Smithsonian Institution, a combined system, with compared instruments, of great extent and importance, will be established. The number of compared instruments is further increased by purchase by our observers, and in order to induce purchases of this kind, Mr. Green is authorized to sell to them, on our order, a compared barometer and thermometer at a reduced price, the Institution paying the remainder of the cost.

The presidents of the several telegraph lines from Washington have given us permission to use, at stated periods, their wires for meteorological purposes, and this part of the system will be put in operation as soon as Mr. Green has completed the necessary instruments.

Researches.—The sum of $100 had been appropriated for the exploration of the mounds of the State of New York, an equal sum having been advanced by the Historical Society of that State. The results form the subject of one of the memoirs of the second volume. The wood-cuts and engravings to illustrate this paper are in a forward state of preparation.

Mr. Davis has been requested to furnish directions for examining, surveying, and describing mounds. The same gentleman is now engaged on an ethnological chart of North America, giving the location of the ancient monuments found in various parts of our country.

Letters have been addressed to several engineers, asking copies of the statistics of the explorations of railway and canal routes, for the purpose of improving our knowledge of the physical geography of the United States. It is hoped in this way to collect much interesting statistics relative to this subject.

Letters also have been addressed to different historical societies and individuals asking the exploration of mounds, &c., the accounts of which may be published in the contributions; and a number of communications have been received on this subject.

Dr. Spencer F. Baird, of Pennsylvania, to whom an appropriation of $75 was granted, has made a large collection of specimens in zoology and comparative anatomy. The former are preserved in spirits, and will be deposited, for the present, in one of the rooms of the basement story.

A number of individuals interested in natural history have subscribed to the support of a scientific exploration, in the new possessions of the United States west of the Rocky Mountains; and the Secretary has agreed to subscribe, in behalf of the Institution, $150 for one share, it being understood that all the new objects discovered shall be presented for publication in the Smithsonian Contributions. One set of plants has been received, for which $20 has been paid.

Operations of the Library.—The books ordered to be purchased by the Executive Committee, from Mr. Marsh, have been received and are now in the library.

Statement of the Librarian.—Since the last meeting of the Executive Committee, the larger part of the library, at present belonging to the Institution, has been received and provisionally arranged. About one-half of it has also been catalogued.

There are, at present, in the library—

Books, say	8,500 volumes.
Pamphlets, say	800
Maps and charts, say	50
Music, say	100 pieces.
Engravings, say	500 sheets.

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Besides these, about 1,200 volumes have been deposited with the Institution by Mr. Marsh, and now form a part of our literary apparatus.

About 900 volumes, 100 pieces of music, 80 maps and charts have been deposited by authors or publishers for the security of copyright.

These have been acknowledged, as well as all books presented to the Institution, the number of which I cannot at this moment state.

The copyright books, &c., have been carefully and fully catalogued, on cards, with the necessary cross references.

Of the copyright books, the *full* title has, in all cases, been recorded *verbatim et literatim*, though the titles are frequently of great length. This is supposed to be but justice to the authors and publishers who send their books. The record, for their sakes, should be full and perfect. It is proper to remark that the number of books, sent for security of copy, has greatly increased. If we should publish monthly lists, for circulation, and make arrangements for publishers to send without expense, we should doubtless receive all, or nearly all, books copyrighted in the country.

All the books, not fully catalogued, have been entered in descriptive lists, to be presented to the Board at their annual meeting.

The progress on the general catalogue of all American libraries, has been about as follows: All the titles of the Cambridge Public Library Catalogue, and supplement of the Cambridge Law Library Catalogue, and of the Congress Library Catalogue, with all the supplements up to the present year, have been mounted on cards. Besides these, the titles of the libraries of the State Department, War Department, and their bureaus, and of the Patent Office, complete to 1843, (since which time but few additions have been made,) have been transcribed from lists found on file in the office of the Secretary of the Senate. The number of titles thus written is about 2,500.

The number of titles of the general catalogue, prepared up to the present time, may be thus stated:

Printed titles, say	58,000
Transcribed, say	2,500
Written for our own Library, say	1,500
Total	62,000

As soon, therefore, as the library is moved into the west wing, and there is room to arrange their titles, we can offer for general reference, a catalogue, *in one alphabetical arrangement*, of all the principal libraries in this city, and in the larger collections of Cambridge. The whole containing, perhaps, two-thirds of the different books of all the public libraries of America.

All this labor could not, of course, be done, besides attending to the other duties of my office, without much assistance. This will be manifest when it is remembered that in the Royal Library of Paris, the British Museum, and other similar establishments in Europe, it has been found by experience that one man can catalogue on an average not more than fifty titles per diem.

The written cards have been prepared by Mr. Russell, and they amount to more than four thousand in number. Besides this, Mr. Russell has filled all the copyright certificates, and assisted in the other work of the library.

Information respecting American Libraries.—I have received about one hundred and fifty official reports from librarians, and a large number of letters, in reply to letters from myself, besides the printed catalogues.

I hope to be able to present to the Board, at their next meeting, full "Notes on the Public Libraries of the United States," with comparative statistics of foreign libraries.

Respectfully submitted. C. C. JEWETT.

Propositions.—Important improvements have lately been made in the instruments of astronomical observations that would greatly facilitate the labors of Lieutenant Gilliss, and enable him to perform a much larger amount of work in the same time; and it has been suggested whether the Institution ought not to procure for him these improved instruments, in anticipation of an appropriation of Congress.

Professor Mitchell has requested the aid of the Institution, in making a catalogue of stars visible at the Cincinnati Observatory. The Secretary has informed him that the sum he requires is beyond the present means of the Institution to grant.

Subscription to the Astronomical Journal.—A new Astronomical Journal has been recommended by the American Association, and established at Cambridge, Massachu-

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setts, which will have a great tendency to advance astronomical science in this country. It has been proposed that the Institution shall subscribe for a number of copies, sufficient to supply the foreign observatories and distribute these in connection with its other means of diffusing knowledge.

Subscription to Association Report.—The American Association for the Advancement of Science is now publishing, in a volume, the report of its proceedings. The subscription to this volume is not sufficient to defray the expenses of it, and it has been proposed that the Institution purchase one hundred copies, at $1 each, for distribution, as an important means of diffusing knowledge. The Association has presented to the Institution all the books which it receives in the way of donations, and will, in all cases, co-operate with the Smithsonian Institution.

A list of occultations, similar to that for 1848–9, has been prepared by Mr. Downes for 1850, is now in the process of being [stereotyped, and will probably be published in the course of a few days. The cost of the calculation of these tables will be paid by Lieutenant Davis, out of the appropriation made at the last session of Congress, for the Nautical Almanac. The only expense, therefore, to the Institution for this publication, will be the cost of the printing and paper. It has been printed, and will be distributed in the early part of next week.

Apparatus.—Dr. Hare's apparatus, in part, has been cleaned and displayed as far as our room will permit.

Several small invoices of apparatus have been purchased, consisting of such articles as will be required for the lectures of the coming winter. They are designated in the bills.

Dr. Hare has signified his intention of presenting a number of articles of apparatus, not included in his first gift, to the Institution; also, a collection of rare minerals, chiefly metallic ores.

The Secretary has received a letter from the eldest son of Dr. Hare, expressing the approbation of his father's family of the donation of the apparatus to the Institution, and their gratification with the manner in which the gift had been received.

The Secretary has also purchased a set of plants, collected by the late Dr. Oakes in the New England States, for which the sum of $20 has been paid.

Lectures.—The Secretary has written to a number of gentlemen, distinguished in literature and science, to deliver courses of lectures, before the Institution, during the coming winter. Almost all, who have been addressed, have accepted the invitation, and have apparently considered the invitation a compliment to their reputation and standing. Their names are as follows:

Dr. Robert Hare, Philadelphia, Pennsylvania.
Professor Louis Agassiz, Cambridge, Harvard.
Professor Francis Lieber, Columbia, South Carolina.
Professor Stephen Alexander, Princeton.
Lieutenant Charles H. Davis, Nautical Almanac.
Professor Joseph Reed, University of Pennsylvania.
Professor J. F. W. Johnson, Durham, England.
Professor Charles Davies, New York.
Professor Henry D. Rogers, Boston, Massachusetts.
Mr. J. H. Alexander, Baltimore, Maryland.
Dr. E. H. Davis, Ohio.
Rev. George W. Bethune, Philadelphia, Pennsylvania.
Professor W. H. Harvey, Dublin.
Professor S. S. Haldemann, Marietta, Pennsylvania.
Dr. Louis C. Beck, New Brunswick, New Jersey.
Right Rev. Bishop Alonzo Potter, Philadelphia, Pennsylvania.
President Francis Wayland, L.L. D., Brown University.
President Mark Hopkins, Williams College, Massachusetts.
Hon. Edward Everett, Cambridge, Massachusetts.
Professor John W. Draper, New York.
Rev. John Hall, Trenton, New Jersey.
Professor C. S. Henry, New York.

Association of Teachers.—An Association of Teachers has been formed in this District, which has held its meetings in one of the rooms of the Smithsonian building. Lectures have been given to the Association, in this place, by the Secretary, Dr. L. D. Gale, and Dr. Foreman. These meetings will be continued in the rooms of the Institution, if the Executive Committee have no objections.

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The Secretary has received a verbal communication from the President of Columbian College, and the Dean of the National Medical College, requesting that regular courses of lectures be given, at stated periods, at the Institution, and that the pupils of their respective schools be allowed to attend. Though the plan of the Institution does not, strictly speaking, embrace educational operations, yet it may indirectly afford important aid in advancing the cause of education.

The Secretary left the city during the warmest weather of the season; but, in his absence, he was engaged in duties pertaining to the operations of the Institution. He first attended the meeting of the American Association, at Cambridge, as the representative of the Institution. He next visited Toronto, Canada West, to examine the system of meteorological observations, carried on at the observatory of that place, and to inform himself practically of the manipulations of the self-registering photographic magnetic apparatus. He afterwards spent two weeks in the city of New York, with Professor Guyot, in arranging the meteorological system of the State of New York.

Dr. Foreman, during the absence of the Secretary, besides attending to the meteorological correspondence, was engaged in arranging in volumes, and indexing the letters of the Institution. These already amount to several thousands, exclusive of the correspondence relative to the library, which is in the possession of Professor Jewett, who will arrange them in accordance with the same plan.

[The journal of the Executive Committee subsequent to this meeting was destroyed in the fire at the Smithsonian Institution.]

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REPORTS OF THE EXECUTIVE COMMITTEE.

Report of the Executive Committee for the year 1847.

The Executive Committee report the state of the funds of the Institution, on the 1st December, 1847, as follows:

The Board of Regents have drawn from the Treasury, of accruing interest, to pay the current expenses of the Institution $40,660 81

The disbursements from this fund have been as follows:

For expenses of Board of Regents and its committees	$3,876 47	
For materials and erection of specimen walls, and superintendence thereof	393 68	
For books purchased	555 99	
For compensation to architects for designs, &c	1,825 00	
For recording and copying	878 98	
For services of Assistant Secretary	200 00	
For services of messenger	402 50	
For postage	28 99	
For printing	847 63	
For examination of quarries, including expenses of geologist	370 76	
For perspective views of Institution	200 00	
For chemical examination of building materials	94 50	
For expenses connected with ceremonies, &c., on the occasion of laying the corner-stone of building	185 87	
For stationery	112 83	
For philosophical and chemical apparatus	1,571 47	
For salary of Secretary	1,750 00	
For expense of first volume of Transactions, in part	203 58	
For incidentals, including furnishings, freight, carriage, hackhire, &c	557 20	
For surveying and recording levels of Institution grounds	112 50	
For expenses of building, including superintendence	25,002 67	
	37,670 02	
Balance in the hands of Corcoran & Riggs, December 1, 1847	2,990 79	
		$40,660 81

The entire amount of the funds of the Institution on the 1st instant was $758,159.79, being $861.79 more than the amount of its funds on the day of the passage of the act by which it was organized; and, on the first of next month, there will be due of interest $15,455.

The Institution has no debts, except a few unimportant items not yet rendered, and also an account for the seal of the Institution.

W. W. SEATON,
ROBERT DALE OWEN,
A. D. BACHE.

Report of the Executive Committee for 1848.

The Executive Committee submit to the Board of Regents the following report of the expenditures, state of the finances and condition of the Smithsonian Institution.

The whole amount of Smithson's property received into the Treasury of the United States on the 1st of September, 1838, was $515,169. The interest which had accrued on the same up to 1st July, 1846, when, by the act of Congress, the funds were placed under the direction of the Board of Regents, was $242,129. This sum, together with the accruing interest, the Board of Regents were authorized to expend

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in the erection of a building, and in defraying the current expenses of the Institution.

During the last two years and four months, in which the Institution has been under the charge of the Regents, there has been expended towards attendance of the Regents, and incidental and miscellaneous expenses, the erection of the building, improvement of grounds, salaries of officers, the sum of $106,520.19, as will be seen in the following exhibits, viz:

Construction of buildings, including superintendence		$51,678 48
Expenses of architect's office, travelling expenses, stationery, draughtsman, &c.		1,218 00
Laying corner stone		21 00
Examination of quarries and specimen walls		74 00
Improvement of grounds		1,290 88
Publication of "Hints on Public Architecture"		1,147 25
Occultations and researches		525 00
Philosophical and chemical apparatus		332 70
Public lectures		80 00
Publication of Contributions to Knowledge		3,709 24
Library and salary of Librarian		1,741 26
Pay of messenger		388 12
Recording and copying for Board of Regents, Executive Committee, &c	$116 54	
Ditto, for Secretary	232 00	
		348 54
Incidental expenses	533 10	
Ditto, for Secretary, including office rent	177 65	
		710 75
Expenses of Board of Regents and committees		966 90
Expenses of Secretary, consequent upon the delivery of lectures at Princeton, and expenses to New York and Philadelphia on business of the Board		280 50
[N. B.—The proceeds of the Lectures at Princeton, $1,000, have been paid by the Secretary.]		
House rent of Secretary for two years		550 00
Payments to Secretary on account of salary		3,824 81
		68,880 17
Disbursements as exhibited by previous reports		37,670 02
		$106,550 19
During the same time, there has been received from interest and the sale of Treasury notes, the sum of		$115,964 60
From the Secretary's lectures at Princeton		1,000 00
		116,964 60
Leaving a balance on hand of		10,444 41

Funds of the Institution.

Amount of Smithson's bequest	$515,169 00	
Interest due thereon to 1st July, 1846	242,129 00	
		$757,298 00
Balance on hand 1st January, 1849	10,444 21	
Treasury notes on hand	226,000 00	
Permanent fund	515,169 00	
		751,613 41
If to this we add the premium of 8 per cent., which Treasury notes now bear, say		18,000 00
The funds of the Institution will be		$778,613 21

Thus showing, that after an expenditure of $106,550.19, the cash on hand and the value of the cash investments, exceed the amount on hand on the organization of

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the Institution in September, 1846, by nearly $16,000, subject, however, to a few outstanding accounts not yet presented, estimated at $7,500.

The committee are confident that, by continuing the system of finance recommended by the committee and adopted by the Board of Regents at their last annual session, the building can be completed and the Institution be put into full operation at the end of three years from March next, without withdrawing more than $100,000 from the fund of $242,129 set apart by Congress for buildings, &c., leaving the residue, $142,000, to be added to the amount of the original bequest of Smithson, and making the permanent fund of the Institution $657,000, yielding an annual income of $39,420, (which may thereafter be readily increased to $40,000 per annum,) for the increase and diffusion of knowledge.

During the past year the committee has held frequent meetings at the call of the Secretary, for consultation with that officer on the affairs of the Institution. The several operations mentioned in the Secretary's report were discussed at these meetings, and several small appropriations were authorized, which arose from contingencies unforeseen by the Board, and which were duly charged and exhibited in the accounts of the committee. The Board of Regents having authorized the Executive Committee to make compensation to the Assistant Secretary, acting as Librarian, for his services to the Building Committee, and relative to the library, have granted him the sum of $250.

An extra edition of the Secretary's report for the year 1847, was ordered to be printed, for the use of the Board of Regents, from the forms used by the printer for Congress.

Mr. Bache and the Secretary were appointed a committee to confer with Dr. Hare, relative to the presentation of his extensive and valuable chemical apparatus to the Institution; which committee afterwards reported that Dr. Hare had unconditionally presented his apparatus to the Institution, and that workmen had been employed to clean and pack the same for removal to Washington. A complete set of the "Annales de Chimie" was authorized to be purchased of Dr. Hare, to accompany his apparatus.

The Secretary was authorized to order, conditionally, the instruments necessary to complete the outfits of Lieutenant Gilliss, of the Navy, on his scientific expedition to Chilé.

A number of propositions relative to publications, researches, &c., have been submitted to the Executive Committee, and have been referred to the Secretary and Dr. Bache.

On consultation with the Secretary and Librarian, the committee recommends the following appropriations for the operations of the Institution during the year commencing on the 19th of March next, viz:

For publication of Contributions to Knowledge	$3,000 00
Scientific researches and computations	700 00
Meteorological instruments and researches	1,000 00
Expenses of public lectures, including lights	500 00
Publication of scientific reports	500 00
General catalogue of American Libraries	1,000 00
Purchase of bibliographical works and books of general reference	2,000 00
Binding of books, blank books, stamps, certificates, &c	250 00
Purchase of books, needed by authors of memoirs, reports, &c	400 00
General expenses, including salaries of officers, expenses of Board and committees, clerk-hire, postage, &c	8,000 00
	$17,350 00

The aggregate of the above estimates exceeds, by the sum of $2,350, the amount limited by the finance resolutions of the Board of Regents, December 1, 1847, as applicable each year for the operation of the Institution, exclusive of the building fund, until the year 1852, when the building is to be completed and the entire income of the Institution left free for the prosecution of the objects contemplated by the acts establishing the Institution; but as the present available funds exceed the amount anticipated when these resolutions were adopted, it is believed that the additional $2,350 may be spared in the ensuing year for the objects specified, without trenching on the annual building fund, or endangering the accomplishment of the end had in view by the Board of Regents in adopting the finance resolutions of December 1, 1847, namely: the saving of a certain sum to be added to the permanent

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fund. In conclusion, the committee would beg leave to submit to the Board that the amount and variety of disbursements which the Executive Committee have to make, and the proper keeping and recording the accounts and appropriations of the Institution, require the services of a skillful accountant and book-keeper for the performance of this duty, as well as the examination of accounts for payment, the preparation of estimates on which to base requisitions, the preparation of statements of expenditures for the examination and approval of the proper officers, as required by law, preliminary to their presentation to the Treasury Department for settlement, and such other duties of accountant, book-keeper, and clerk, as the Board of Regents, the Executive and Building Committees, and the Secretary may have occasion to require of him.

The committee, therefore, recommend the appointment of such an officer, at an annual salary not exceeding four hundred dollars.

All of which is respectfully submitted.

W. W. SEATON.
J. A. PEARCE.
A. D. BACHE.

WASHINGTON, *January* 1, 1849.

Report of the Executive Committee for the year 1849.

The Executive Committee submit to the Board the following report of the expenditures, state of finance, &c., of the Smithsonian Institution:

The whole amount of the Smithsonian bequest received into the United States Treasury was $515,169. The interest which had accrued on the same up to July 1st, 1846, was $242,129, making in all $757,298.

The Regents were authorized to expend on the building the $242,129 which had accrued in interest, together with such portions of interest on the original bequest as might remain unexpended in any year. They concluded, however, to limit the whole expenditure on the building and the grounds to a sum not exceeding $250,000; and, in order that this might not exhaust the accrued interest, it was resolved that this expenditure should not be made at once, but in the course of five years, and that in the meantime the sum of $242,000, authorized to be expended on the building, should be invested so as to yield an interest which might, in part, serve to defray the expense of the building. To carry out this plan, the $242,000, with the addition of accrued interest sufficient to make up the sum of $250,000, were invested in Treasury notes; and, in order that the Institution might not be a loser by a possible depreciation of these notes, the contracts for the building were made payable in them at par value or in specie, at the option of the Regents. Up to this time, only $50,000 of these notes have been disposed of. They have thus been made to yield a constant interest, besides increasing in value on account of the rise in Government securities. The whole expenditure since the commencement of operations to the present time, is $199,157.21; the whole of which has been made from the accruing interest on the fund and the sale of $50,000 of notes above-mentioned.

The following is a synopsis of the present state of the finances of the Institution:

Amount of Smithson's bequest	$515,169 00
Interest due thereon to July 1, 1846	242,129 00
	$757,298 00
Balance on hand January 1, 1850	$8,277 85
Treasury notes funded	200,000 00
Permanent fund	515,169 00
Present rate of United States loan, 112 per cent.; therefore add	24,000 00
	747,446 85
From this should be deducted, for accounts not rendered	6,000 00
	$741,446 85

The whole amount paid on the building and grounds up to this time is $134,876.21.

From this it appears that, after paying for more than one-half of the building, carrying on the operations of the Institution, collecting a library and philosophical

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apparatus, the sum originally intrusted to the Regents has only been diminished by less than $16,000. The object of this scheme of finance is to increase the original fund, which, though sufficient to establish a library and a museum, is found inadequate to meet the demands which result from the comprehensive plan of organization which has been adopted. The result has, thus far, been so successful, that there can now be no doubt that, if the same plan be continued until the end of the five years and the funds do not greatly depreciate, there will remain the sum of $150,000 in accrued interest to add to the principal. To secure this desirable end without the possibility of failure, it may be now advisable to petition Congress to receive from the Regents the sum of $150,000, and place it with the original principal sum, never to be expended, and to complete the building out of the remaining funded notes and the accruing interest.

W. W. SEATON.
ALEXANDER D. BACHE.
JAS. ALFRED PEARCE.

Report of the Executive Committee for the year 1850.

The Executive Committee submitted to the Board the following report of the expenditures, state of finances, &c., of the Smithsonian Institution up to the end of the year 1850:

The whole amount of the Smithsonian bequest received into the Treasury of the United States, was		$515,169 00
The annual interest on the same at six per cent., is	$30,910 04	
The interest which had accrued up to July, 1846, when the trust was placed under the care of the Regents, was		242,129 00
Total		$757,298 00

The Regents were authorized to expend on the building the $242,129, which had accrued in interest, together with such portions of interest on the original bequest as might remain unexpended in any year. It was, however, thought that the income of the original bequest would be small in proportion to the demand made upon it, in carrying out the several parts of the extended plan of organization, and in defraying the necessary expenses of a large building. The Regents, therefore, determined to increase the permanent fund by saving from the accrued and accruing interest the sum of $150,000, and for this purpose they resolved to limit the expenditure on the building and grounds to the sum of $250,000. In order to save a part of the accrued interest it was further resolved that the building should not be completed at once, but in the course of a number of years, and that the sum intended for its erection should be put at interest, so that the income from this source might, in part, defray the expense of the edifice.

To carry out this plan, the $242,000 of accrued interest with an addition of interest sufficient to make up $250,000, were drawn from the Treasury and invested in United States securities, and in order that the Institution might not suffer loss by any depreciation of these securities, the contracts of the building were made payable in Treasury notes at par value, or in specie, at the option of the Regents.

This temporary investment has proved entirely successful. It has yielded a constant interest, and also a premium in almost every case of sale, on account of the rise in the value of Government securities.

Of the original sum thus put at interest, there remains, at present, $180,000 which, at sixteen per cent., the present premium of Government securities is worth $208,800. From this it appears, that after all the expenditure on the building and grounds, on researches, publications and lectures, on the library, museum, and gallery of art, not only is the original bequest untouched, but there is now on hand $208,800 of unexpended income.

At the last meeting of the Board of Regents, it was resolved to fire-proof the interior of the centre building, at an additional expense of $44,000. The whole cost of the building and grounds, in round numbers, will then be $300,000. The only way in which this additional expenditure can be met, without interfering with the plan of finance above described, is that of extending the time of completing the building. The scheme of adding to the original bequest, will be placed beyond the possibility of failure from any further demands on account of the building, if the petition

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presented to Congress, to take from the Institution, to be placed with the original bequest, the sum of $150,000 be granted, there will then remain on hand, unexpended, a sum sufficient to complete the whole of the exterior, all the interior of the two wings and of the two ranges, and all the rooms of the towers of the building. This space will be sufficient for the wants of the Institution, until the accumulating interest will enable the Regents to finish the remainder in accordance with the fire-proof plan.

At the last meeting of the Board, a new system of keeping the accounts and making the disbursements was adopted. From the beginning of the Institution up to this time, the accounts had been kept, and the disbursements made, by the Chairman of the Executive Committee. This method was temporarily adopted, but had been continued until the expiration of the term of service of the Hon. W. W. Seaton, Chairman of the Executive Committee, rendered a change necessary. This gentleman had kept the accounts from the beginning, and made the disbursements without charge to the Institution, and since it was not proper to burthen his successor with such onerous duties, it was resolved that the following system be adopted:

1. That an assistant be appointed to take charge of the funds for the current expenses of the Institution, who shall give security for the safe-keeping of all moneys belonging to the Institution, which shall come into his possession.

2. That the funds before-mentioned, be deposited, until otherwise ordered, with Messrs. Corcoran & Riggs, to the credit of the Treasurer of the Institution.

3. That all bills presented for payment, shall be audited and certified by the Secretary, on whose order, the Assistant, acting as Treasurer, shall pay them.

4. That the Treasurer report to the Secretary, monthly, all payments made by him during the preceding month.

5. That all accounts be examined and certified by the Executive Committee.

6. That the account books be kept in the Smithsonian building, so that the Secretary and the Executive Committee may have ready access to them.

The Hon. W. W. Seaton was chosen Treasurer, and signified his acceptance of the office, but that he would receive no compensation for his services.

The new system of accounts went into operation at the beginning of July last, and has been continued up to this time with satisfaction to the committee.

At the beginning of the Institution, it was not possible, before knowing the development of the plans of organization in practical operation, to adopt a classification of accounts showing the expenditure for different objects. The plan of operations is now, however, so far established, that a system of classification may be adopted.

The Secretary has, accordingly, with the assistance of the other officers of the Institution, prepared a programme of accounts, which may serve until the building is completed, and afterwards form the basis of a classification for all future operations. This programme, which receives the approbation of the committee, is as follows:

PROGRAMME OF ACCOUNTS.

I. BUILDING, FURNITURE AND FIXTURES, GROUNDS.

1. Pay on contracts for building.
2. Pay of architects and superintendents, including office and incidentals.
3. Expenses of Building Committee, including clerk-hire
4. Incidental expenses to building, viz:
   - (1.) Experiments on, and tests of, building materials.
   - (2.) Examination of Quarries.
   - (3.) Miscellaneous.
   - (4.) Premiums paid architects.
5. Furniture and fixtures for uses in common.
   - Do. do. Publications.
   - Do. do. Researches.
   - Do. do. Lectures and apparatus.
   - Do. do. Library.
   - Do. do. Museum.
   - Do. do. Gallery of Art.
6. Grounds.

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II. GENERAL EXPENSES.

1. Expenses of the Board of Regents and Committees.
2. Lighting and heating.
3. Postage.
4. Transportation.
5. Stationery.
6. General printing.
7. Incidentals general, including messenger, clerk-hire, &c.
8. Salaries.

III. PUBLICATIONS, RESEARCHES AND LECTURES.

1. Publications.
   (1.) Smithsonian Contributions to Knowledge.
   (2.) Reports on progress of knowledge.
   (3.) Other publications.
2. Researches.
   (1.) Meteorology.
   (2.) Computations.
   (3.) Investigations.
3. Lectures.
   (1.) Pay of lecturers.
   (2.) Illustrations for lectures.
   (3.) Attendance, lighting, advertising, &c.
4. Apparatus.
5. Salaries.

IV. LIBRARY, MUSEUM, AND GALLERY OF ART.

1. Library.
   (1.) Cost of books.
   (2.) General catalogue.
   (3.) Copyrights.
   (4.) Incidentals to library, binding, messengers, clerk-hire, &c.
   (5.) Salaries.
2. Museum.
   (1.) Explorations.
   (2.) Expenses of Collections.
   (3.) Cost of transportation.
   (4.) Incidentals to Museum.
   (5.) Salaries.
3. Gallery of Art.
   (1.) Purchases.
   (2.) Incidentals.

The Secretary has, also, with the assistance of Professor Jewett, and Colonel W. B. Randolph, of the United States Treasury Department, gone over all the accounts from the beginning of the Institution, and re-arranged them in accordance with this programme. In making this re-arrangement, and critical examination of all the accounts, they have found no errors of any magnitude, and the amount of receipts and expenditure in this new arrangement perfectly agree with those presented in the general account of Mr. Seaton.

In a few cases payments have been made in accordance with the spirit of the resolutions of the Board, but which fall under no special appropriation, the committee would, therefore, suggest that a special action of the Board be taken with reference to these.

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Fund Account of

RECEIPTS.

1846.				
July 1.	To James Smithson, net proceeds of his bequest			$515,169 00
"	Interest thereon to date, paid by the United States			242,129 00
Sept. 10.	H. W. Hilliard, Regent, over payment returned			99
1847.				
Jan. 1.	Interest on assumed debt, 1st July to 31st December, 1846, first half year			15,455 07
July 5.	Interest on assumed debt, to 1st July, 1847, second half year			15,455 07
Oct. 21.	Interest on $250,000 Treasury notes, to 17th August, six months			7,500 00
Nov. 26.	Proceeds of Treasury notes sold, viz: amount of notes	$10,000 00		
	Interest to day of sale	121 67		
			10,121 67	
			$805,830 71	
1848.				
Jan. 1.	To proceeds of Prof. Henry's lectures at Princeton			$1,000 00
Jan. 15.	Interest on assumed debt, to 1st January, 1848, third half year			15,455 07
April 1.	Interest on $240,000 Treasury notes to 17th February, 1848, six months			7,200 00
April 4.	George M. Dallas, Chancellor, premium paid for $7,000 Treasury notes			105 00
"	" deposit to credit of Wm. W. Seaton, Chairman			95 00
May 10.	Proceeds of Treasury notes, viz: amount of notes	$7,000 00		
	Premium thereon	140 00		
	Interest to day of sale	45 50		
			7,185 50	
July 7.	Interest on assumed debt, to 1st July, 1848, fourth half year			15,455 07
Aug. 17.	Interest on $240,000 Treasury notes, to 17th August, six months			7,200 00
Aug. 24.	Proceeds of Treasury notes, viz: amount of notes		5,000 00	
	Premium	$200 00		
	Less commission	12 50		
		187 50		
	Interest to day of sale	5 00		
			5,192 50	
Oct. 16.	Proceeds of Treasury notes, viz: amount of notes		9,000 00	
	Premium	$270 00		
	Less commission	11 25		
		258 75		
	Interest to day of sale	85 50		
			9,344 25	
			$68,232 25	
1849.				
Jan. 5.	To interest on assumed debt, fifth half year			$15,455 14
Feb. 17.	Treasury notes, this amount redeemed and funded in United States six per cent. stock			226,000 00
Feb. 28.	Interest on Treasury notes, $226,000, to 17th February, six months			6,780 00
April 17.	United States six per cent. stock sold, viz: amount of stock	$16,000 00		
	Premium	$1,600 00		
	Less commission	40 00		
		1,560 00		
			17,560 00	
July 2.	Interest on $210,000 stock, from 17th February to 30th June, 1849			4,614 24
July 5.	Interest on assumed debt, sixth half year			15,455 07
Oct. 20.	United States six per cent. stock sold, viz: amount of stock	$10,000 00		
	Premium	$1,312 50		
	Less commission	25 00		
		1,287 50		
			11,287 50	
			$297,151 96	
1850.				
Jan. 2.	To interest on $200,000 six per cent. stock, to 1st of January, six months			$6,000 00
Jan. 4.	Interest on assumed debt, seventh half year			15,455 07
July 2.	Interest on $200,000 six per cent. stock, to 30th June, six months			6,000 00
July 9.	Interest on assumed debt, eighth half year			15,456 07
July 27.	United States six per cent. stock sold, viz: amount of stock	$10,000 00		
	Premium	$1,400 00		
	Less commission	25 00		
		1,375 00		
			11,375 00	
Sept. 19.	United States six per cent. stock sold, viz: amount of stock	$10,000 00		
	Premium	1,600 00		
			11,600 00	
Dec. 28.	Washington monument, office furniture sold to that society			50 71
Dec. 31.	Interest on $180,000 six per cent. stock, to 31st December, six months			5,400 00
			$71,335 35	

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The Smithsonian Institution.

EXPENDITURES.

1846.			
July 1.	By the United States—assumed debt		$515,169 00
Sept. 6.	Wm. W. Seaton, Chm'n Executive Committee, from Treasury United States		2,000 00
Sept 10.	Repaid by Mr. Hilliard		90
Dec. 21.	From Treasury United States		2,000 00
1847.			
Feb. 17.	Treasury notes, proceeds of warrant on Treasury United States		250,000 00
Feb. 25.	Wm. W. Seaton, Chm'n Executive Committee, from Treasury United States		3,584 07
July 8.	Second half year, interest on assumed debt		15,455 07
Oct. 21.	Six months interest on $250,000 Treasury notes		7,500 00
Nov. 26.	Proceeds of $10,000 notes sold		10,121 67
			$806,830 71
1848.			
Jan. 1.	By Prof. Joseph Henry, Secretary, on account of his salary		$1,000 00
Jan. 15.	Wm. W. Seaton, Chairman Executive Committee, third half year's interest		15,455 00
April 1.	Treasury notes, investment of so much interest on notes received this day		7,000 00
	George M. Dallas, Chancellor, balance of said interest		200 00
April 4.	Wm. W. Seaton, Chairman Executive Committee, deposited by Mr. Dallas		95 00
May 10.	Proceeds of notes sold		7,185 50
July 5.	Fourth half year's interest		15,455 00
Aug. 2.	Interest on Treasury notes due 17th August		7,200 00
Aug. 24.	Proceeds of notes sold		5,192 50
Oct. 16.	Proceeds of notes sold		9,344 25
	Profit and loss, premium paid for $7,000 Treasury notes		105 00
			$68,232 25
1849.			
Jan. 9.	By Wm. W. Seaton, Chairman Executive Committee, fifth half year's interest	$15,455 14	
Feb. 17.	United States six per cent. stock, loan of 1847	226,005 00	
Feb. 28.	Wm. W. Seaton, Chairman Executive Committee, interest on Treasury notes, 17th February	6,780 00	
April 17.	Proceeds of stock sold	17,560 00	
July 2.	Interest on stock to 30th June	4,614 24	
July 7.	Sixth half year's interest	15,455 07	
Oct. 20.	Proceeds of stock sold	11,287 50	
		$297,151 95	
1850.			
Jan. 2.	By William W. Seaton, Chairman Executive Committee, interest on stock to 1st January		$6,000 00
Jan. 4.	Seventh half year's interest		15,455 07
July 2.	William W. Seaton, Treasurer, interest on stock to 30th June		6,000 00
July 9.	Eighth half year's interest		15,455 07
July 27.	Proceeds of stock sold		11,375 00
Sept. 19.	Proceeds of stock sold		11,600 00
Dec. 28.	Furniture sold on account of pay of architects, &c		50 71
Dec. 31.	Interest on stock to 31st December, 1850		5,400 00
			$71,335 85

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The following is a General Statement of all the Expenditures from the beginning of the Institution to the end of the year 1850, *arranged in accordance with the programme of accounts before given.*

	To 31st Dec., 1847.	Year 1848.	Year 1849.	Year 1850.	Aggregate.
I. Building, Furniture and Fixtures, Grounds.					
Pay on contracts for building	$22,890 00	$48,810 00	$50,300 00	$24,000 00	$140,000 00
Pay of architects, superintendents, &c.	8,482 76	2,949 86	8,124 12	2,459 42	12,016 16
Expenses of Building Committee	1,338 85	17 24		6 00	1,362 09
Experiments on and tests of building materials	488 18	62 00	15 50		565 68
Examination of quarries	250 76				250 76
Premiums paid architects	1,250 00				1,250 00
Miscellaneous, incidental to building	300 68 209 00	50 00 1,688 65	111 21 1,868 97	1,868 05	2,329 89 3,766 62
Furniture and fixtures for uses in common			1,717 52	892 98	2,610 45
do. do. publications					
do. do. researches					
do. do. lectures			25 00	166 50	191 50
do. do. library			847 00	545 80	892 80
do. do. museum					
do. do. gallery of art					
Grounds	1,298 50	109 88	727 17	1,615 96	3,746 51
II. General Expenses.					
Expenses of Board of Regents and committees	3,823 45	114 25	84 25	216 12	3,788 07
Lighting and heating			378 95	58 50	437 45
Postage	60 06	65 76	307 86	183 05	616 23
Transportation	36 96	85 92	266 19	517 55	906 62
Stationery	7 02	63 11	85 46	281 85	387 44
General printing	294 63	68 50	199 00	134 25	696 38
Apparatus	1,546 47	412 71	1,799 90	899 92	4,659 00

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Salaries do.	1,014 49	4,200 20	2,011 66	2,020 20	12,000 10
III. Publications, Researches, and Lectures.					
Smithsonian Contributions to Knowledge	756 00	2,956 87	2,082 87	8,662 86	9,458 10
Reports on progress of knowledge			444 00	935 91	1,379 91
Other publications			152 54	585 98	738 52
Meteorology			814 00	1,256 66	2,070 66
Computations		525 00	225 00		750 00
Investigations		100 00	50 00	90 00	240 00
Pay of lecturers			275 00	1,521 05	1,796 05
Illustrations and apparatus for lectures				92 22	92 22
Attendance and lighting for lectures		80 00	118 62	88 50	287 12
Salaries, publications, &c.			150 00	1,000 00	1,150 00
IV. Library, Museum, and Gallery of Art.					
Cost of books	545 99	865 86	2,878 14	4,225 25	8,015 24
General catalogue			591 58	284 97	876 55
Copyrights	85 00		41 66	156 00	282 66
Incidentals to library, (binding, clerk hire, messenger, &c.)		600 00	790 72	833 24	2,223 96
Salaries, library		750 00	2,499 98	1,999 92	5,249 90
Explorations, museum				150 00	150 00
Expenses of collections, museum			184 50	543 00	727 50
Cost of transportation, do.				103 00	103 00
Incidentals, do.				20 00	20 00
Salaries, do.				750 00	750 00
Purchases, gallery of art				178 30	178 30
Incidentals, do.			11 25	100 00	111 25
	$41,071 45	$65,477 84	$79,826 87	$58,807 46	$244,188 12

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From the foregoing exhibit it will be seen that the funds of the Institution have been carefully husbanded, are now in a good condition, and that, though the cost of the building will exceed the first estimate, yet the original plan of saving a portion of the accrued interest to increase the capital, will, in due time, be carried out.

The committee are of opinion that an expenditure of twenty-five thousand dollars may be allowed from the annual income for defraying the expenses of the Institution, and for carrying on the several parts of the programme, during the present year, and they will hereafter introduce a resolution to that effect.

Signed, A. D. BACHE, J. A. PEARCE, JOS. G. TOTTEN, } *Committee.*

Report of the Executive Committee for the year 1851.

By the act of Congress incorporating the Institution, and a resolution of the Board of Regents, it becomes the duty of the Executive Committee to examine and certify the accounts, and to advise with the Secretary with reference to the operations which may be undertaken in accordance with the plan of organization. The committee, during the past year, have attended to these duties and beg leave to submit the following report relative to the same:

The operations of the Institution now follow a regular course, and therefore as frequent meetings of the committee are not required as at the beginning. Indeed, they prefer to leave the principal direction of the affairs of the Institution to the Secretary, believing that individual responsibility is the safe ground for confidence in the proper administration of a trust of this kind.

The active operations being of a public character, there is full opportunity of judging of their value, and whether they are in accordance with the will of the testator. It is, however, of the first importance that the financial condition of the Institution should be frequently and critically examined, and that it should be seen that every account paid has a proper voucher, and that all money has been properly expended in accordance with the appropriations of the Board.

A new system of accounts was introduced in July, 1850, in accordance with which all bills presented for payment are audited and certified by the Secretary, on whose order they are paid by the treasurer, and all the accounts are revised by the Executive Committee. The Executive Committee have examined every account paid since the date mentioned, and find that each is attended with the proper voucher, and that the expenditures have been judiciously and economically made.

They are happy to inform the Board that the financial affairs of the Institution are still in a very favorable condition, as will be seen by the following statement:

The whole amount of the Smithsonian bequest received into the Treasury of the United States, was	$515,169 00
The annual interest on the same, at 6 per cent., is $30,910.04; the interest which had accrued up to July, 1846, when the trust was placed under the care of the Regents, was	242,129 00
Total	757,298 00

Out of this sum the Regents were authorized to expend on the building $242,129, which had accrued in interest, together with such portions of interest on the original bequest as might remain unexpended in any year.

The Regents, however, thought it advisable to increase the principal, and in order to do this, resolved that the erection of the building should be spread over a number of years, and that the sum authorized to be used for this purpose should be put at interest, so that the income from this source might in part defray the expense of the edifice. To carry out this plan, $250,000 of accrued interest were drawn from the Treasury and invested in United States securities. This plan of finance has been rigidly adhered to, and it now appears from the account books of the Institution that after all the expenditures on the building and grounds, on researches, publications and lectures, on the library, museum and gallery of art, there is on hand government security valued, at the present rate of premium, at $209,700, so that the original amount and interest which had accrued previous to the time at which the Institution came into the charge of the Regents, has only been diminished by about $33,000.

In accordance with a part of this plan, Congress has been requested to take from the Institution $150,000, to be placed with the original bequest as a part of the princi-

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pal, the interest of which alone can be expended, and it is hoped that an act to this effect will be passed during the present session.

The committee have also examined the various and multiplied operations of the Institution as set forth in the report of the Secretary, and they are happy to assure the Board and the public that, in their opinion, the benevolent designs of the donor are faithfully and efficiently executed in accordance with his injunction, to "*increase and diffuse knowledge among men.*"

The following is an abstract of the expenditures during the past year, ranged according to the programme of accounts, which was submitted by the Executive Committee at the last meeting of the Board:

Expenditures of the Smithsonian Institution during the year 1851.

Pay on contracts	$22,000 00	
Pay of architects, &c.	2,214 45	
Expenses of building committee, &c.	43 58	
Miscellaneous to building	62 07	
Furniture, &c., in common	657 06	
Do. for publications	21 00	
Do. lectures	149 99	
Do. library	255 22	
Do. museum	52 68	
Grounds	515 54	
		$25,971 54
Expenses of Board of Regents	291 20	
Lighting and heating	486 35	
Postage	370 78	
Transportation	851 43	
Stationery	419 96	
General printing	1,159 06	
Apparatus	148 69	
Incidentals general	1,878 43	
Salaries general	3,799 92	
		$9,405 82
Smithsonian Contributions	3,211 76	
Reports on progress of knowledge	473 82	
Other publications	100 00	
Meteorology	394 50	
Computations	300 00	
Investigations	110 00	
Pay of lecturers	635 00	
Illustrations, &c., for lectures	316 49	
Attendance, &c., for lectures	36 75	
Salaries, publications	900 00	
		6,478 82
Cost of books	2,016 90	
General catalogue	174 88	
Incidentals to library	1,402 01	
Salaries to library	1,999 92	
Explorations—museum	50 00	
Expenses of collections—museum	183 03	
Incidentals, do.	512 06	
Salaries, do.	1,500 00	
Gallery of art, purchases	10 00	
Incidentals, gallery of art	6 00	
		7,854 80
Total		$49,710 48
On the building in whole up to end of last year		174,982 00
		25,971 00
		$200,953 00

Respectfully submitted, by

A. D. BACHE,
J. A. PEARCE,
JOS. G. TOTTEN,
} *Executive Committee.*

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Report of the Executive Committee for the year 1852.

The Executive Committee submit to the Board of Regents the following report, relative to the present state of the finances and the expenditures during the year 1852:

They are happy to inform the Board that, after a strict examination of the accounts, they are enabled to present a very satisfactory statement of the present condition of the finances, and the result of the investigations as to the expenditures during the year.

The whole amount of the Smithsonian bequest deposited in the Treasury of the United States, (from which an annual income at 6 per cent. interest is derived, of $30,910.14) is		$515,169 00
There is now on hand, of unexpended interest, in charge of Messrs. Corcoran & Riggs	$208,800	
Of this sum it is proposed to expend on the building	58,800	
Which will leave to be added to the principal, according to the original proposition of Prof. Bache		150,000 00
The whole fund will then be		$665,169 00

The following is a general view of the receipts and expenditures during the past year:

Receipts.

From the income of the original fund	$30,910 14
From interest on the extra fund	9,129 20
Balance in the hands of the Treasurer at the beginning of the year 1852	7,296 76
	$47,336 10

Expenditures.

For the building	$14,047 07
For items common to the general objects of the Institution	11,505 80
For publications, researches, and lectures	12,224 48
For library, museum, and gallery of art	9,808 26
Balance in the Treasury	250 49
	$47,336 10

The following is a more detailed statement of the expenditures:

Statement in Relation to the Expenditures of the Smithsonian Institution during the year 1852.

BUILDING, FURNITURE, FIXTURES, AND GROUNDS.

Pay on contracts	$10,000 00	
Pay of architects, superintendents, &c	1,889 88	
Expenses of Building Committee	7 50	
Miscellaneous incidental to building	1,198 64	
Furniture, &c., for uses in common	682 94	
Do. for library	265 15	
Do. for museum	8 56	
Grounds	49 45	
		$14,047 07

GENERAL EXPENSES.

Expenses of Board of Regents, &c	267 18	
Lighting and heating	899 70	
Postage	472 07	
Transportation	1,827 91	
Stationery	222 88	
General printing	850 42	
Apparatus	844 88	
Incidentals, general	2,821 34	
Salaries, general	4,299 92	
		11,505 80

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PUBLICATIONS, RESEARCHES, AND LECTURES.

Smithsonian Contributions to Knowledge	$5,736 74	
Reports on progress of knowledge	1,616 75	
Other publications	1,007 86	
Meteorology	2,079 88	
Investigations	75 00	
Pay of lecturers	1,385 00	
Illustrations and apparatus for lectures	230 18	
Attendance and lighting, lectures, &c	93 12	
		$12,224 48

LIBRARY, MUSEUM, AND GALLERY OF ART.

Cost of books	1,098 77	
General catalogue	377 25	
Copyrights	52 00	
Stereotyping	1,305 28	
Incidentals to library	1,196 48	
Salaries, library	2,499 96	
Expenses of collections, museum	215 57	
Incidentals, museum	563 01	
Salaries, museum	1,999 94	
		9,308 26
Total expended in 1852		$47,085 61

A general account of the operations of the Institution is given in the report of the Secretary, to which the Board are referred. The committee are happy to be able again to assure the Board that, in their opinion, the operations are such as to carry out, in the most effectual manner, the wise and benevolent design of James Smithson, viz: that of *increasing and diffusing* knowledge among men." The only regret which can be entertained with regard to the present condition of the Institution, is, that the funds are so encumbered with the restrictions imposed upon them by the original charter, that more of the income cannot be devoted to the publications and other active operations.

Respectfully submitted.

J. ALFRED PEARCE,
J. G. TOTTEN,
A. D. BACHE,
Executive Committee.

Report of the Executive Committee for the year 1853.

The Executive Committee submit to the Board of Regents the following report, relative to the present state of the finances, and the expenditures during the year 1853.

They are happy to inform the Board that, after a strict examination of the accounts, they are enabled to present a very satisfactory statement of the present condition of the finances, and the result of the investigations as to the expenditures, during the year.

The whole amount of the Smithsonian bequest, deposited in the Treasury of the United States, (from which an annual income at 6 per cent. is derived of $30,910.14,) is		$515,169 00
Amount of unexpended interest, reported last year as in charge of Messrs. Corcoran & Riggs	$208,800 00	
From which deduct amount expended on the building during the past year	29,391 98	
	179,408 02	
Of this it is proposed to expend the further sum of	29,408 02	
Which will leave to be added to the principal, according to the original proposition of Professor Bache		150,000 00
The whole fund will then be		$665,169 00

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Statement in Relation to the Expenditures of the Smithsonian Institution during the year 1858.

BUILDING, FURNITURE, FIXTURES, ETC.

Pay on contracts	$25,500 00	
Pay of architects, superintendents, &c.	1,580 70	
Magnetic observatory	1,578 28	
Expenses of Building Committee	77 00	
Miscellaneous, incidental to building	184 84	
Furniture, &c., for uses in common	354 05	
Furniture for library	117 11	
		$29,891

GENERAL EXPENSES.

Expenses of Board of Regents	195 00	
Lighting and heating	646 47	
Postage	864 28	
Transportation	1,918 19	
Stationery	6 50	
General printing	894 19	
Apparatus	203 50	
Incidentals, general	*3,852 42	
Watchman	867 00	
Salaries, general	4,099 92	
		12,042

PUBLICATIONS, RESEARCHES, AND LECTURES.

Smithsonian Contributions to Knowledge	8,160 04	
Reports on progress of knowledge	139 29	
Other publications	1,116 58	
Meteorology	2,846 51	
Pay of lecturers	783 00	
Illustrations and apparatus for lectures	661 84	
Attendance and lighting lectures, &c.	445 40	
		13,652

LIBRARY, MUSEUM, AND GALLERY OF ART.

Cost of books	841 75	
Stereotyping and printing	1,818 42	
Incidentals to library	1,581 02	
Salaries, library	2,499 96	
Explorations, museum	250 00	
Expense of collections, museum	240 04	
Incidentals, museum	229 71	
Salaries, museum	1,999 92	
		8,960

Total expenditures in 1858 ..... $64,047

The following is a general view of the receipts and expenditures for the year 1858:

RECEIPTS.

Balance in the Treasury, as per last report	$250 49	
Interest on the original fund for the year 1858	30,910 14	
Interest on the extra fund for the year 1858	10,440 00	
		$41,600

EXPENDITURES, EXCLUSIVE OF BUILDING.

For items common to the objects of the Institution	12,042 47	
For publications, researches, and lectures	13,652 66	
For library, museum, and gallery of art	8,960 82	
Balance in the Treasury	6,944 68	
		41,600

* Including $948.34 charged for interest on over-drafts during the year.

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An appropriation of $30,000 was made at the last meeting of the Board of Regents, to be expended under the direction of the Executive Committee and the Secretary, for carrying on the operations of the Institution.

From the foregoing statement of accounts it will be seen that, while the library and museum have had their share of the appropriation, the active operations have exceeded their part by upwards of $4,000. This excess has been caused, principally, by printing and preparing for the press a number of memoirs, which are to form the volume of Contributions for the year 1854.

Whatever may be the future distribution of the income, a greater expenditure than has been made for the library and museum, during the past year, could not, in the opinion of the committee, have been judicious.

The additions to the library and museum, the former of which were chiefly in return for the publications of the Institution, under the system of exchanges, have been considerable and valuable. A particular estimate of these will be presented to the Board hereafter.

The Board are referred to the report of the Secretary, recently submitted, for a detailed account of the operations of the Institution, during the past year. The committee think that these operations are in harmony with the law of Congress, with the objects of the founder of the Institution, and successfully carry out his idea of the increase and diffusion of knowledge.

After the present year, during which, the building will probably be completed, the fund for annual expenditures will be somewhat enlarged, and increased benefits, it is hoped, will be realized.

J. A. PEARCE,
A. D. BACHE,
J. G. TOTTEN, } *Executive Committee.*

Report of the Executive Committee for the year 1854.

The Executive Committee submit to the Board of Regents the following report relative to the present state of the finances, and the expenditures during the year 1854:

The whole amount of the Smithsonian bequest, deposited in the Treasury of the United States, (from which an annual income, at 6 per cent., is derived of $30,910.14,) is		$515,169 00
Amount of unexpended interest, reported last year as in charge of Messrs. Corcoran & Riggs	$179,408 02	
From which deduct amount passed by them to the credit of the treasurer to meet payments on building during 1854	54,408 02	
	125,000 00	
Balance in the Treasury, January 1, 1855	14,159 59	
		139,159 59
		$654,328 59

The following is a general view of the receipts and expenditures for the year 1854, *exclusive of amount drawn from Corcoran & Riggs on account of the building.*

RECEIPTS.

Balance in the Treasury, as per last report	$6,944 68	
Interest on the original fund for the year 1854	30,910 21	
Interest on the extra fund for the year 1854	7,276 89	
		$45,131 28

EXPENDITURES.

For items common to the objects of the Institution	$12,752 00	
For publications, researches, and lectures	8,094 88	
For library, museum, and gallery of art	9,512 19	
For building purposes—difference between the amount expended and the amount withdrawn from Corcoran & Riggs	613 12	
Balance in the Treasury	14,159 59	
		$45,131 28

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Detailed Statement of the Expenditures during the year 1854.

BUILDING, FURNITURE, FIXTURES, ETC.

Pay on contracts	$52,280 00	
Pay of architect and draughtsman	1,287 00	
Miscellaneous incidental to building	495 13	
Magnetic observatory	18 77	
Furniture, &c., for uses in common	988 12	
Furniture, &c., for library	52 12	
		$55,021 14

GENERAL EXPENSES.

Expenses of Board of Regents, &c.	467 71	
Lighting and heating	887 80	
Postage	467 67	
Transportation and exchanges	1,644 43	
Stationery	662 50	
General printing	1,094 22	
Apparatus	427 26	
Incidentals general, including salary of clerk, book-keeper, janitor, watchman, laborer, extra clerk-hire	3,600 99	
Salary of Secretary	3,499 92	
		12,752 00

PUBLICATIONS, RESEARCHES, AND LECTURES.

Smithsonian Contributions to Knowledge	3,778 96	
Reports on progress of knowledge	88 84	
Other publications	917 89	
Meteorology	2,208 88	
Investigations	10 00	
Pay of lecturers	895 00	
Illustrations and apparatus for lectures	156 87	
Attendance and lighting lectures, &c.	58 94	
		8,094 88

LIBRARY, MUSEUM, AND GALLERY OF ART.

Cost of books	2,166 50	
General catalogue	151 85	
Stereotyping and printing	551 71	
Incidentals, library, including salary of two assistants, and binding	2,329 55	
Salary of Assistant Secretary	1,319 43	
Explorations, museum	250 00	
Expenses of collections, museum	157 19	
Incidentals, including alcohol, &c., assistance and labor, apparatus, catalogue, glass jars, &c.	536 54	
Salary of Assistant Secretary	1,999 92	
Incidentals, gallery of art	50 00	
		9,512 19
Total expenditures in 1854		$85,379 71

In the appropriations made, April, 1854, for the year, the estimated income of the Institution was $88,500—[the actual income was $88,186.60]—of this sum $7,000 was devoted to the building and the remaining $81,500 to the operations of the Institution.

The first mentioned sum ($7,000) is included in the balance in the Treasury, the whole of which may be appropriated during the present year to the building.

The whole expenditure on the operations of the Institution was $80,358.57, which is $1,141.88 less than was appropriated.

The appropriation was not made until one-third of the year had passed, and this, with the unusual expenditure occasioned by a call of a special meeting of the Board, and the extra clerk-hire and printing on account of the various reports, rendered it

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impossible to apportion the disbursements in exact conformity to the estimates. They will be found, however, approximately to agree—those for publications, &c., being less, and those for library, museum, &c., more.

On account of the additions which the Building Committee have found it necessary to make to the contract, for the better security and adaptation of the building, the extra fund has been reduced to $140,000, instead of $150,000, as was formerly contemplated. It is probable a further reduction will be required to pay the amount still due on the contract, and for other purposes connected with the building, but this should not be allowed to diminish the extra fund below $125,000.

The following table presents a general exhibit of all the receipts and expenditures on account of the Smithsonian fund, from the beginning of the Institution* until the 1st of January, 1855:

* For the years 1846–1850, given in the Report of the Committee for 1850.

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DR. *Fund Account of*

RECEIPTS.

1851.

Jan. 20.	To interest on assumed debt, half year		$15,455 07
July 7.	Interest on $180,000 six per cent. stock to June 30, six months		5,400 00
July 16.	Interest on assumed debt, half year		15,455 07
			$36,310 14

1852.

Jan. 7.	To interest on $180,000 six per cent. stock to December 31, six months		$5,400 00
Jan. 20.	Interest on assumed debt, half year		15,455 07
Jan. 26.	Proceeds of six per cent. stock sold, viz: Amount of stock	$180,000 00	
	Premium thereon	28,800 00	
			208,800 00
July 2.	To interest on assumed debt, half year		15,455 07
Dec. 27.	Repayment by J. Wyman on account of Smithsonian Contributions		5 00
Dec. 31.	Interest on $208,800 from January 26 to September 11, at five per cent.		6,554 00
Dec. 31.	Interest on $208,800 from September 11 to December 31, at four per cent.		2,575 20
			$254,244 34

1853.

Jan. 11.	To interest on assumed debt, half year		$15,455 07
Feb. 11.	Repayment on account of apparatus		294 63
Mar. 31.	Repayment on account of Smithsonian Contributions		74 00
June 30.	Interest on $208,800 from January 1 to June 30, at five per cent.		5,220 00
July 2.	Interest on assumed debt, half year		15,455 07
Dec. 7.	Repayment on account of Smithsonian Contributions		40 00
Dec. 31.	Interest on $208,800 at five per cent., from July 1 to December 31		5,220 00
			$41,758 77

1854.

Jan. 12.	To interest on assumed debt from July 1 to December 31, 1853		$15,455 07
Jan. 18.	Corcoran & Riggs, on account of funds in their hands		48,800 00
April 1.	Corcoran & Riggs, on account of funds in their hands		10,000 00
July 14.	Interest on assumed debt from January 1 to June 30, 1854		15,455 07
July 21.	Corcoran & Riggs, interest to June 30, 1854, on funds in their hands		3,875 00
Aug. 7.	Corcoran & Riggs, on account of funds in their hands		10,000 00
Sept. 25.	Corcoran & Riggs, on account of funds in their hands		5,000 00
Nov. 2.	Corcoran & Riggs, on account of funds in their hands		10,000 00
Dec. 30.	Corcoran & Riggs, interest to December 31, 1854, on funds in their hands		3,401 30

REPAYMENTS.

Jan. 4.	Sale of clock, on account of apparatus		400 00
Jan. 14.	Minnesota Historical Society, on account of Smithsonian Contributions		20 00
Mar. 13.	Coast Survey Office, on account of apparatus		569 22
Mar. 13.	Coast Survey Office, on account of transportation		12 27
Mar. 17.	J. M. Gilliss, Navy Department, on account of transportation		16 62
July 29.	G. P. Putnam, sale of books, on account of Smithsonian Contributions		143 60
			$123,140 03

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EXPENDITURES.

1851.					
Jan. 20.	By W. W. Seaton, treasurer,			half year's interest	$15,455 07
July 7.		Do.	do.	interest on stock to June 30	5,400 00
July 16.		Do.	do.	half year's interest	15,455 07
					$36,310 14
1852.					
Jan. 7.	By W. W. Seaton, treasurer,			interest on stock to December 31	$5,400 00
Jan. 20.		Do.	do.	half year's interest	15,455 07
Jan. 26.		Corcoran & Riggs, amount in their hands, on interest			206,800 00
July 2.	By W. W. Seaton, treasurer,			half year's interest	15,455 07
Dec. 27.		Do.	do.	repayment by Wyman	5 00
Dec. 31.		Do.	do.	interest paid by Corcoran & Riggs	6,554 00
Dec. 31.		Do.	do.	do. do.	2,575 20
					$254,244 34
1853.					
Jan. 11.	By W. W. Seaton, treasurer				$15,455 07
Feb. 11.		Do.	do.		294 63
Mar. 31.		Do.	do.		74 00
June 30.		Do.	do.		5,220 00
July 2.		Do.	do.		15,455 07
Dec. 7.		Do.	do.		40 00
Dec. 31.		Do.	do.		5,220 00
					$41,758 77
1854.					
Jan. 12.	By W. W. Seaton, treasurer				$15,455 07
Jan. 18.		Do.	do.		48,800 00
April 1.		Do.	do.		10,000 00
July 14.		Do.	do.		15,455 07
July 21.		Do.	do.		3,375 00
Aug. 7.		Do.	do.		10,000 00
Sept. 25.		Do.	do.		5,000 00
Nov. 2.		Do.	do.		10,000 00
Dec. 30.		Do.	do.		3,401 39
Jan. 4.		Do.	do.		400 00
Jan. 14.		Do.	do.		20 00
Mar. 13.		Do.	do.		560 92
Mar. 13.		Do.	do.		12 27
Mar. 17.		Do.	do.		16 62
July 29.		Do.	do.		143 69
					$123,140 03

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The committee, after conferring with the Secretary, submit the following estimates for appropriations for the year 1855:

BUILDING, FURNITURE, ETC.

Pay on contracts	$8,000 00	
Pay of architects, &c.	500 00	
Incidental expenses to building	500 00	
Furniture and fixtures	1,000 00	
Magnetic observatory	20 00	
		$10,020 00

GENERAL EXPENSES.

Meetings of Board	600 00	
Lighting and heating	850 00	
Postage	500 00	
Transportation and exchange	1,600 00	
Stationery	850 00	
General printing	250 00	
Apparatus	500 00	
Incidentals general	600 00	
Salaries—Secretary	8,500 00	
clerk	1,200 00	
book-keeper	200 00	
janitor	400 00	
laborer	250 00	
watchman	865 00	
extra clerk-hire	200 00	
		11,865 00

PUBLICATIONS, LECTURES, ETC.

Smithsonian Contributions	4,500 00	
Reports on progress of knowledge	2,000 00	
Other publications	500 00	
Meteorology	2,000 00	
Computations, researches, and investigations	500 00	
Lectures	1,000 00	
		10,500 00

LIBRARY, MUSEUM, AND GALLERY OF ART.

Library—

Pay of assistants	2,000 00	
Cost of books and binding	3,500 00	
Incidentals to library, cases, &c.	1,000 00	
Stereotyping system	100 00	
	6,600 00	

Museum—

Salary—Assistant Secretary	$2,000 00	
Explorations	200 00	
Alcohol, glass jars, &c.	850 00	
Assistance and labor	100 00	
Incidentals, cases, &c.	1,000 00	
Catalogue	250 00	
	8,900 00	
		10,500 00
Contingencies		100 00
		$42,485 00

Respectfully submitted,

J. A. PEARCE,
A. D. BACHE,
J. G. TOTTEN,
Executive Committee.

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Report of the Executive Committee for the year 1855.

The Executive Committee submit to the Board of Regents the following report, relative to the finances of the Smithsonian Institution, the expenditures during the year 1855, &c.

The following is a general statement of the fund:

The whole amount of the Smithsonian bequest deposited in the Treasury of the United States, (from which an annual income, at 6 per cent., of $30,910.14 is derived,) is		$515,169 00
Amount of unexpended interest reported, 1855, January 1, as in charge of Messrs. Corcoran & Riggs	$125,000 00	
From which deduct amount passed by them to the credit of the Treasurer to meet payments on building during 1855	5,000 00	
	120,000 00	
Balance in the hands of the Treasurer, 1st January, 1856	8,189 84	
		128,189 84
		$643,358 84

The following is a general view of the receipts and expenditures during the year 1855:

RECEIPTS.

Balance in the hands of the Treasurer, January 1, 1855	$14,159 59	
Interest on the original fund ($515,169) for 1855	80,910 21	
Interest on the extra fund for the year 1855	6,044 88	
Amount drawn from Corcoran & Riggs to meet payments on building	5,000 00	
		$56,114 18

EXPENDITURES.

For building, furniture, fixtures, &c	$19,312 87	
For items common to the objects of the Institution	13,372 71	
For publications, researches, and lectures	7,169 95	
For library, museum, and gallery of art	8,068 81	
		$47,924 84
Balance in the hands of the Treasurer, on the 1st of January, 1856		8,189 84
		$56,114 18

The following is a detailed statement of the expenditures during the year 1855:

BUILDING, FURNITURE, FIXTURES, ETC.

Pay on contracts	$16,200 00	
Pay of architects, draughtsmen, &c	500 00	
Miscellaneous repairs to building, &c	436 90	
Furniture and fixtures for uses in common	1,488 04	
" for library	400 00	
" for museum	200 00	
Grounds (lamps for the walks)	74 25	
Magnetic observatory	13 68	
		$19,312 87

GENERAL EXPENSES.

Meetings of the Board of Regents and committees	849 65
Lighting and heating	1,022 80
Postage	495 41
Transportation and exchange	1,103 23
Stationery	411 98
General printing	827 55
Apparatus	257 06
Laboratory	123 14
Incidentals, general	1,257 16

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Salaries—Secretary	$3,500 00	
Chief clerk	1,200 00	
Book-keeper	200 00	
Janitor	400 00	
Laborer	250 00	
Watchman	365 00	
Extra clerks	250 00	
		$12,513

PUBLICATIONS, RESEARCHES, AND LECTURES.

For Smithsonian Contributions to Knowledge	3,562 92	
For reports on progress of knowledge	350 00	
For other publications	316 88	
For meteorology	1,862 28	
For computations	50 00	
For investigations	12 50	
For lectures, illustrations, and apparatus	40 66	
Attendants, &c	60 76	
Pay of lecturers	914 00	
		7,169

LIBRARY, MUSEUM, AND GALLERY OF ART.

Library: Cost of books	$3,186 15	
Transportation for library	330 00	
Stereotype system	44 22	
Pay of assistants	1,740 00	
Incidentals to library	124 81	
Museum: Salary of Assistant Secretary	2,000 00	
Explorations	150 00	
Collections	150 50	
Alcohol, glass jars, &c	199 88	
Assistance, labor, and incidentals to museum	390 57	
Transportation for museum	529 24	
Gallery of Art	88 18	
		$8,928
		$47,924

It will be seen, from the foregoing statement, that the expenditures for the building differ considerably from the estimate of the committee. At the time of making the estimate, they had no means of ascertaining what would be required for payment of the contractor. The architect had not furnished his final statement of the entire cost of the edifice, and it was in consideration of this that a resolution was adopted, authorizing the Building Committee to pay out of the special fund of the Institution such sum as would be required. They have accordingly drawn $5,000 on this account from Messrs. Corcoran & Riggs, as is shown in the general statement.

On account of the large drafts required for payments on the building, an effort was made to curtail the expenditures on other parts of the operations. The whole sum appropriated for the current expenses of the Institution during the year 1856, exclusive of the building, was $82,465. Of this sum there has been expended but $28,611.47; the remainder, $3,853.53, serves to increase the amount in the hands of the Treasurer, and will be appropriated to discharging the sum still due the contractor.

Hereafter the funds of the Institution will be in a much more manageable condition. The architect has rendered his final account, and the sum of about $6,000 still due on the building, being definitely known, a more precise estimate can be now made. If the expenditures during the present year are kept within the estimate, as they probably will be, the sum of $125,000 of accrued interest will be on hand at the beginning of 1857, which may be permanently invested as a part of the capital.

It has been stated, in the preceding reports, that a plan of finances was adopted in the beginning, by which a portion of the income might be saved for the purpose of increasing the capital rendered necessary to defray the expense of the support of the large building authorized by Congress. It was at first proposed to add $100,000 to the original fund; and afterwards the plan was enlarged, so as to make the amount $150,000. This last plan, however, was based upon a limit of expenditure of $250,-

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000 for the building. The scheme would have been entirely successful, and even a larger saving might have been made had the building been completed within the estimated cost; but this was found inconsistent with a proper regard to the safety and durability of the edifice. The actual cost, according to the statement of the Building Committee, exclusive of furniture, is about $810,000; notwithstanding this, the sum which has been saved is $125,000. Although this is not all that could have been wished, it is, perhaps, more than could have been reasonably anticipated. The committee have been informed that Messrs. Corcoran & Riggs do not desire any longer to retain possession of the surplus fund, and it will, therefore, be necessary to urge its acceptance by Congress as an addition to the fund in the United States Treasury, or securely invest it in State stocks. The interest on the original fund is received semi-annually, and, as far as possible, it will be advisable to make the payments of salaries and other objects at the same time. Unless this is done, a surplus will continually be required, which is not drawing interest, or bills must be paid by drafts in anticipation of the end of the half year. While the building was in process of erection, it was impossible to observe a rule of this kind, since, according to the original contract, the payments for the work done were to be made monthly.

It will be recollected that a portion of the Smithsonian bequest (about $25,000) still remains in England, as the principal of a life annuity in favor of Madame de la Batut, the mother of the nephew of Smithson. The annuitant is a very aged person, and cannot, in the ordinary course of nature, be expected long to survive. The Hon. Mr. Rush, to whom this matter was referred, has written to Messrs. Clarke, Fynmore & Fladgate, the solicitors employed in obtaining the bequest, asking them to procure information in regard to this point.

Another subject, which may require the attention of the Board, is that of the Wynns estate, contingently bequeathed to the Smithsonian Institution. It appears by a letter from Joseph H. Patton, Esq., of New York, who was engaged by the Board to inquire into the matter, that the widow of Mr. Thomas Wynns was married in 1854 to Captain Anderson, of the Royal Artillery, now stationed at Barbadoes, where she resides with the child, upon whose decease, without issue, the bulk of the estate is to come to this Institution.

Mr. Patton advises that the Board require from the executors security for the proper fulfillment of the trust.

The committee submit the following estimates for appropriations for the year 1856:

BUILDING, FURNITURE, FIXTURES, ETC.

Due on contracts	$6,000 00	
Repairs and miscellaneous incidentals to building	600 00	
Furniture, &c., for uses in common	500 00	
library	300 00	
museum	150 00	
Magnetic observatory	20 00	
		$7,570 00

GENERAL EXPENSES.

Meetings of Board and committees	375 00	
Lighting and heating	1,200 00	
Postage	400 00	
Transportation and exchange	1,000 00	
Stationery	300 00	
General printing	350 00	
Apparatus	300 00	
Laboratory, fitting up	800 00	
Incidentals general	500 00	
Salaries—Secretary	3,500 00	
chief clerk	1,200 00	
book-keeper	200 00	
janitor	400 00	
watchmen	550 00	
laborers	450 00	
extra clerks	200 00	
		11,725 00

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PUBLICATIONS, RESEARCHES, AND LECTURES.

Smithsonian Contributions to Knowledge	$5,500 00	
Reports on the progress of knowledge	1,000 00	
Other publications	355 00	
Meteorology	1,000 00	
Investigations, computations, and researches	500 00	
Lectures	800 00	
		$9,155

LIBRARY, MUSEUM, AND GALLERY OF ART.

Library—		
Cost of books	3,500 00	
Pay of assistants	2,500 00	
Transportation	300 00	
Incidentals	500 00	
Museum—		
Salary of Assistant Secretary	2,000 00	
Explorations	200 00	
Collections	150 00	
Alcohol, glass jars, &c.	500 00	
Transportation	300 00	
Assistance and labor	500 00	
Gallery of art	100 00	
		10,550
		$39,000

Respectfully submitted,

J. A. PEARCE,
J. G. TOTTEN,
A. D. BACHE,
} *Executive Committee.*

Report of the Executive Committee for the year 1856.

The Executive Committee submit the following report of the state of the finan of the Smithsonian Institution, the expenditures during the year 1856, and an e mate of receipts and appropriations for 1857.

The whole sum appropriated for the current expenses of the Institution for t year 1856, including the remaining payment on the building, was thirty-nine th sand dollars. The actual expenditures for the several items do not materially di from those specified in the estimate submitted by the committee and adopted by t Board. The whole sum expended was $38,158.90, which is less than the amo appropriated by $841.10.

A committee was appointed February 24, 1855, consisting of Messrs. Engl Pearce, and Mason, to consider the best means of investing the extra fund, Mr. C coran having signified his intention to relinquish the charge of the money depos with him. After due consultation, the committee concluded to recommend the p chase of State stocks. This being agreed to by the Board, at a subsequent meet the Secretary was instructed to make the purchase under the direction of the Fina Committee. An account of the transaction under this resolution is given in t report of the Hon. Mr. English of that committee.

It will be recollected that the extra fund amounted to one hundred and twenty-f thousand dollars, and from the report of Mr. English it will be seen that of this a one hundred and nineteen thousand four hundred dollars have been expended in t purchase of State stocks; that six hundred dollars remain in the hands of Mes Riggs & Co.; and that five thousand dollars of that fund, applied in 1855 to the p ments on the building, is now in the Treasury. There is, therefore, five thous six hundred dollars of the extra fund uninvested. It is, however, not advisable invest this immediately, because the half-yearly income of the Institution is n receivable until the first of July, and it is necessary to retain a sufficient sum in t Treasury to meet the payments for paper, printing, &c., for the next volume of Co tributions, which cannot be postponed.

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The following is a general statement of the fund:

The whole amount of the Smithsonian bequest deposited in the Treasury of the United States, (from which an annual income, at 6 per cent., of $30,910.14 is derived,) is		$515,169 00
Extra fund from unexpended income, now invested in State stocks, yielding an annual interest of $7,380	$119,400 00	
Extra fund deposited with Riggs & Co., to be invested	600 00	
Amount in the Treasury, being part of the extra fund of accumulated interest, designed to be invested, and which, with the above sums of $119,400 and $600, will make the amount $125,000, appropriated for the increase of the permanent fund	5,000 00	
		$125,000 00
Balance in the hands of the treasurer January 1, 1857, $7,164.32, from which deduct the $5,000 belonging to the extra fund		2,164 32
		$642,333 32

The following is a general view of the receipts and expenditures during the year 1856:

Receipts.

Balance in the hands of the treasurer January 1, 1856, of which $5,000 belongs to the extra fund*	$8,189 75	
Interest on the original fund ($515,169) for 1856	30,910 14	
Interest on the extra fund from Corcoran & Riggs, while on deposit	$2,533 33	
Interest on the extra fund since investment in State bonds	3,690 00	
	6,223 33	
		$45,323 22

Expenditures.

For building, furniture, fixtures, &c.	$7,891 04	
For items common to the objects of the Institution	12,859 28	
For publications, researches, and lectures	7,876 23	
For library, museum, and gallery of art	9,532 35	
		$38,158 90
Balance in the hands of the treasurer January 1, 1857, of which $5,000 belongs to the extra fund		$7,164 32

The following is a detailed statement of the expenditures during 1856:

BUILDING, FURNITURE, FIXTURES, ETC.

Pay on contracts, &c.	$6,086 38	
Repairs and miscellaneous incidentals to building	1,359 23	
Furniture and fixtures for uses in common	198 88	
Furniture and fixtures for library	168 16	
Furniture and fixtures for museum	88 14	
Magnetic observatory	48 80	
Grounds	46 50	
		$7,891 04

GENERAL EXPENSES.

Meetings of Board and committees	869 50
Lighting and heating	1,308 92
Postage	696 76
Transportation and exchange	1,184 29
Stationery	109 67
General printing	888 25
Apparatus	739 18
Laboratory	629 91

* Reduced nine cents, to correct an error in last statement.

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Incidentals, general	$883 92	
Salaries—Secretary	3,499 92	
chief clerk	1,200 00	
book-keeper	200 00	
janitor	399 96	
watchman	372 00	
laborers	636 00	
messenger	192 00	
extra clerks	109 00	
		$12,893

PUBLICATIONS, RESEARCHES, AND LECTURES.

Smithsonian Contributions to Knowledge	4,355 88	
Reports on progress of knowledge	75 50	
Other publications	158 20	
Meteorology	2,279 90	
Investigations, computations, and researches	142 75	
Lectures—		
Pay of lecturers	885 00	
Incidentals to lectures	29 50	
		7,876

LIBRARY, MUSEUM, AND GALLERY OF ART.

Library—		
Cost of books	3,692 05	
Pay of assistants	1,728 00	
Transportation	451 39	
Incidentals	152 50	
Museum—		
Salary of Assistant Secretary	1,999 92	
Explorations	158 25	
Collections	220 08	
Alcohol, glass jars, &c.	352 64	
Transportation	349 96	
Assistance and labor	327 00	
Gallery of art	100 56	
		9,532
		$33,158

The committee present the following estimates of receipts and expenditures for the year 1857.

RECEIPTS.

Balance in the hands of the treasurer January 1, 1857, (exclusive of $5,000 belonging to extra fund)	$2,164 82	
Interest on the original fund ($515,169) for 1857	30,910 14	
Interest on the extra fund invested in State stocks	7,380 00	
		$40,454

EXPENDITURES.

Building, Furniture, Fixtures, &c.—		
Repairs, additions, and miscellaneous incidentals	1,000 00	
Furniture and fixtures for uses in common	600 00	
Furniture and fixtures for library	350 00	
Furniture and fixtures for museum	200 00	
Magnetic observatory	60 00	
		$2,210

GENERAL EXPENSES.

Meetings of Board and committees	250 00
Lighting and heating	1,300 00
Postage	550 00
Transportation and exchange	1,600 00
Stationery	120 00

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General printing	$200 00	
Apparatus	500 00	
Laboratory	300 00	
Incidentals general	850 00	
Salaries—Secretary	3,500 00	
chief clerk	1,200 00	
book-keeper	200 00	
janitor	400 00	
watchman	400 00	
laborers	700 00	
extra clerks	500 00	
		$12,570 00

PUBLICATIONS, RESEARCHES, AND LECTURES.

Smithsonian Contributions to Knowledge	6,000 00	
Reports on the progress of knowledge	500 00	
Other publications	500 00	
Meteorology	3,000 00	
Investigations, computations, and researches	620 00	
Lectures—		
Pay of lecturers	900 00	
Incidentals	300 00	
		11,820 00

LIBRARY, MUSEUM, AND GALLERY OF ART.

Cost of books	1,000 00	
Pay of assistants	2,000 00	
Transportation for library	300 00	
Incidentals for library	200 00	
Museum, salaries	2,000 00	
Explorations	200 00	
Collections	200 00	
Alcohol, glass jars, &c.	300 00	
Transportation for museum	350 00	
Assistance and labor for museum	600 00	
Gallery of art	250 00	
		7,400 00
		$34,000 00

From this it will be seen that the estimates of expenditure for the year 1857 are six thousand dollars less than the receipts for the same time. It is advisable thus to limit the expenditures for the present year, not merely because it is easier to expand the operations of the Institution than to contract them, but because, as the revenue is payable semi-annually and the accounts must be paid whenever presented, the treasurer has sometimes been obliged to overdraw on the bankers of the Institution, whereas the six thousand dollars, reserved from appropriation and left in the Treasury during the present year, will enable the Secretary and Executive Committee to defray all expenditures without subjecting the Institution to charges for interest on overdrafts.

The committee report, also, that they have examined all the accounts and vouchers and compared them with the books, and find them all correct.

Respectfully submitted,

J. A. PEARCE,
A. D. BACHE,
J. G. TOTTEN, } *Executive Committee.*

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Report of the Executive Committee for the year 1857.

The Executive Committee respectfully submit to the Board of Regents the follow report of the receipts and expenditures of the Smithsonian Institution during year 1857, with estimates for the year 1858:

RECEIPTS.

The whole amount of Smithson's bequest deposited in the Treasury of the United States is $515,169, from which an annual income, at 6 per cent., is derived, of		$30,910
Extra fund from unexpended income invested as follows:		
In $75,000 Indiana 5 per cent. bonds, yielding	$3,750 00	
In $58,000 Virginia 6 per cent. bonds, yielding	3,210 00	
In $7,000 Tennessee 6 per cent. bonds, yielding	420 00	
In $500 Georgia 6 per cent. bonds, yielding	30 00	
In $100 Washington 6 per cent. bonds, yielding	6 00	
		7,416
		38,326
Balance in hands of treasurer January 1, 1857		7,164
Total receipts		$45,490

GENERAL STATEMENT OF EXPENDITURES.

For building, furniture, and fixtures	$4,062 65	
For items common to the different objects of the Institution	13,035 18	
For publications, researches, and lectures	11,051 52	
For library, museum, and gallery of art	6,999 81	
		35,149
Balance in the hands of the treasurer January 1, 1858, of which $5,000 belongs to the extra fund		$10,341

Statement in detail of the expenditures during 1857:

BUILDING, FURNITURE, FIXTURES, ETC.

Repairs, &c., incident to building	$3,805 12	
Furniture and fixtures for uses in common	373 61	
Furniture and fixtures for library	163 50	
Furniture and fixtures for museum	150 80	
Magnetic observatory	49 62	
Grounds	20 00	
		$4,062

GENERAL EXPENSES.

Meetings of Board and committees	281 00	
Lighting and heating	1,244 83	
Postage	524 02	
Transportation and exchange	2,264 74	
Stationery	347 94	
General printing	236 50	
Apparatus	191 66	
Laboratory	841 88	
Salary of the Secretary	3,499 92	
chief clerk	1,200 00	
book-keeper	200 00	
janitor	400 97	
watchmen	534 65	
laborers	794 00	
messenger	128 00	
Extra clerk-hire	222 00	
Incidentals, general	624 07	
		13,035 18

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PUBLICATIONS, RESEARCHES, AND LECTURES.

Smithsonian Contributions	$6,230 02	
Reports on progress of knowledge	842 00	
Other publications	649 90	
Meteorology	2,465 24	
Investigations, computations, and researches	250 00	
Pay of lecturers	980 00	
Incidentals to lectures	184 36	
		$11,051 52

LIBRARY, MUSEUM, AND GALLERY OF ART.

Cost of books	2,019 88	
Pay of assistants	1,194 12	
Transportation for library	200 00	
Museum—salary	1,999 92	
Explorations	57 52	
Collections	49 78	
Alcohol, jars, and museum incidentals	445 77	
Transportation for museum	450 00	
Assistance and labor in museum	500 00	
Gallery of art	82 87	
		6,999 81
Total expenditure		$85,149 16

The estimated income for the year 1857 was $88,290.14, exclusive of the balance in the hands of the treasurer; the *actual* income, exclusive of this balance, was $88,326.14.

The estimated expenditure amounted to $84,000, the actual expenditure to $85,149.16. The excess is due to unexpected repairs, necessary to the building in consequence of a very severe hail storm, which broke several thousand panes of glass, and otherwise injured the edifice; and to the payment of the last unsettled account contracted by the architect for the gas pipes and fixtures.

The expenditures, however, are less than the income for the year, leaving a total balance now in the hands of the treasurer of $10,341.80. Of this sum, $5,000 are the remainder of the extra fund, ($125,000,) intended to be permanently invested, and the whole is at present required for carrying on the operations of the Institution, until the receipt of the next semi-annual income.

During the past year, the stocks purchased by the Institution temporarily declined in commercial value, but they are now selling at about the same prices as those at which they were bought. Fluctuations, however, of this character do not affect the income of the Institution, since the amount of interest continues permanently the same.

The committee respectfully submit the following estimate of the receipts and expenditures for the year 1858:

RECEIPTS.

Balance in the hands of the treasurer January 1, 1858, (exclusive of $5,000 belonging to the extra fund)	$5,341 80
Interest on the original fund for 1858	30,910 14
Interest on the extra fund invested in State stocks	7,416 00
	$43,667 44

EXPENDITURES.

BUILDING, FURNITURE AND FIXTURES, ETC.

Repairs and incidentals	$1,500 00	
Furniture and fixtures in common	500 00	
for library	150 00	
for museum	150 00	
Magnetic observatory	50 00	
		2,350 00

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GENERAL EXPENSES.

Meetings of Board and committees	$300 00	
Lighting and heating	600 00	
Postage	500 00	
Transportation and exchange	2,500 00	
Stationery	350 00	
General printing	350 00	
Apparatus	250 00	
Laboratory	400 00	
Incidentals, general	650 00	
Salaries—Secretary	8,500 00	
chief clerk	1,400 00	
book-keeper	200 00	
janitor	400 00	
watchman	500 00	
laborers	800 00	
extra clerk-hire	800 00	
		$18,000 00

PUBLICATIONS, RESEARCHES, AND LECTURES.

Smithsonian Contributions to Knowledge	6,500 00	
Reports	1,500 00	
Other publications	1,000 00	
Meteorology	3,000 00	
Investigations, computations, and researches	250 00	
Lectures	1,000 00	
		13,250 00

LIBRARY, MUSEUM, AND GALLERY OF ART.

Cost of books	3,000 00	
Pay of assistants in library	1,200 00	
Transportation for library	400 00	
Incidentals for library	150 00	
Museum—salary	2,000 00	
Explorations	50 00	
Collections	50 00	
Incidentals, museum, jars, alcohol, &c.	300 00	
Transportation, museum	550 00	
Assistance and labor, museum	600 00	
Gallery of art	100 00	
		8,400 00
		$37,000 00

It is impossible to make a very definite estimate of the expenditures on account of the museum during the year 1858, because the collection at the Patent Office is to be transferred to the keeping of the Institution, and the amount of expenditures under this head will depend upon the appropriation made by Congress for this purpose.

In conclusion, the committee report that they have examined the books, and each account for the past year, separately, and find them all correct.

Respectfully submitted,

J. A. PEARCE,
A. D. BACHE,
J. G. TOTTEN,
Executive Committee.

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Report of the Executive Committee for the year 1858.

The Executive Committee respectfully submit to the Board of Regents the following report of the receipts and expenditures of the Smithsonian Institution during the year 1858, with estimates for the year 1859:

RECEIPTS.

The whole amount of Smithson's bequest, deposited in the Treasury of the United States, is $515,169, from which an annual income, at 6 per cent., is derived of		$30,910 14
Extra fund from unexpended income invested as follows:		
In $75,000 Indiana 5 per cent. bonds, yielding	$3,750 00	
In $53,000 Virginia 6 per cent. bonds, yielding	3,210 00	
In $7,000 Tennessee 6 per cent. bonds, yielding	420 00	
In $500 Georgia 6 per cent. bonds, yielding	30 00	
In $100 Washington 6 per cent. bonds, yielding	6 00	
		7,416 00
		38,326 14
Balance in hands of Treasurer January 1, 1858		10,341 30
		$48,667 44

EXPENDITURES.

For building, furniture, and fixtures	$1,107 87	
For items common to the different objects of the Institution	9,619 03	
For publications, researches, and lectures	11,956 83	
For library, museum, and gallery of art	9,814 29	
		32,498 02
Balance in the hands of the Treasurer January 1, 1859, of which $5,000 belongs to the extra fund		*$16,169 42

Statement in detail of the expenditures in 1858.

BUILDING, FURNITURE AND FIXTURES, ETC.

Repairs and incidentals	$566 62	
Furniture and fixtures	497 99	
Magnetic observatory	43 26	
		$1,107 87

GENERAL EXPENSES.

Meetings of Board and committees	301 88	
Lighting and heating	712 23	
Postage	442 35	
Transportation and exchanges	1,184 65	
Stationery	413 00	
General printing	192 25	
Apparatus	266 57	
Laboratory	243 60	
Incidentals, general	376 17	
Salaries, Secretary	3,500 03	
chief clerk	1,400 00	
book-keeper, janitor, watchman, &c	509 68	
Extra clerk-hire	127 12	
		9,619 03

* Reduced to $16,141.36 in Report for 1859; $28.06 interest credited in advance not having been received.

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PUBLICATIONS, RESEARCHES, AND LECTURES.

Smithsonian Contributions to Knowledge	$6,884 02	
Reports on progress	1,053 79	
Other publications	654 24	
Meteorology	2,345 62	
Investigations, computations, and researches	130 00	
Lectures	939 16	
		$11,956 83

LIBRARY, MUSEUM, AND GALLERY OF ART.

Cost of books	8,258 51	
Pay of assistants in library	1,000 00	
Transportation for library	439 70	
Incidentals for library	357 70	
Museum, salaries	2,000 00	
Explorations	114 18	
Collections	675 25	
Incidentals for museum, jars, alcohol, &c.	1,074 90	
Transportation for museum	368 26	
Assistants and labor, museum	404 64	
Gallery of art	121 20	
		9,814 29
Total expenditure		$32,498 02

The estimated income for the year 1858, inclusive of the balance in the hands of the Treasurer, was $38,326.14, and the actual income was the same, no change having taken place in the amount received from the interest on the extra fund.

The estimated expenditure was $37,000. The actual expenditure was $32,498. This difference, which is nearly $4,500, has been saved principally on the building, transportation, and the payment of assistants.

The last mentioned item has been somewhat diminished by the payment from the appropriation of Congress for the keeping of the museum of the Exploring Expeditions which has been transferred from the Patent Office to the Smithsonian Institution. The amount received, for the last six months, on this account has been about $2,000. This sum is not credited to the Institution, because the money is disbursed by the Secretary of the Interior.

The amount of income above that of the expenditure was $5,828.12. This sum has been saved with the view of carrying out the design mentioned in the last report, namely, that of accumulating a sufficient sum in the Treasury to enable the payment of cash for all purposes, and thus to save the extra charge which, in almost all cases, is made when payment is deferred.

The amount in the Treasury at the beginning of the present year, for carrying on the operations until the time of receiving the next income, was $16, 169.42. Of this, however, $5,000 belong to the extra fund which has not yet been invested. According to the statement of the Secretary, the Institution, at the beginning of 1859, had no outstanding debts, and hence it appears that the funds are in a good condition.

The committee respectfully submit the following estimate of the receipts and expenditures for the year 1859:

Estimate of the receipts and expenditures for the year 1859.

RECEIPTS.

Balance in the hands of the Treasurer January 1, 1859	$16,169 42	
Interest on the original fund	30,910 14	
Interest on the extra fund	7,416 00	
		$54,495 56

EXPENDITURES.

BUILDING, FURNITURE, AND FIXTURES.

Repairs and incidentals	$1,500 00	
Furniture and fixtures	500 00	
Magnetic observatory	100 00	
		$2,100 00

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GENERAL EXPENSES.

Meetings of Board and committees	$150 00	
Lighting and heating	1,000 00	
Postage	500 00	
Transportation and exchange	1,500 00	
Stationery	400 00	
General printing	500 00	
Apparatus	500 00	
Laboratory	500 00	
Incidentals, general	700 00	
Salaries—Secretary	3,500 00	
chief clerk	1,400 00	
book-keeper	200 00	
janitor	400 00	
watchman	500 00	
laborers	500 00	
extra clerk-hire	250 00	
		$12,500 00

PUBLICATIONS, RESEARCHES AND LECTURES.

Smithsonian Contributions	6,000 00	
Reports	2,000 00	
Other publications	600 00	
Meteorology	3,000 00	
Researches	300 00	
Lectures	1,000 00	
		12,900 00

LIBRARY, MUSEUM, AND GALLERY OF ART.

Library—		
Cost of books	3,000 00	
Pay of library assistants	1,200 00	
Transportation for library	500 00	
Incidentals for library	100 00	
Museum—		
Salary of Assistant Secretary	2,000 00	
Explorations	100 00	
Collections	150 00	
Incidentals to museum	700 00	
Transportation	600 00	
Assistants and labor	2,000 00	
Gallery of art	150 00	
		10,500 00
		$38,000 00

The committee have examined all the books and accounts of the Institution for the past year, and find them to be correct.

Respectfully submitted.

J. A. PEARCE,
A. D. BACHE, } *Executive Committee.**

Report of the Executive Committee for the year 1859.

The Executive Committee respectfully submit to the Board of Regents the following report of the receipts and expenditures of the Smithsonian Institution during the year 1859, with estimates for the year 1860:

RECEIPTS.

The whole amount of Smithson's bequest deposited in the Treasury of the United States is $515,169, from which an annual income, at six per cent., is derived, of	$30,910 14

* General J. G. Totten, the other member of the Executive Committee, is now in Europe.

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Extra fund of unexpended income, invested as follows:		
In $75,000 Indiana 5 per cent. bonds, yielding	$3,750 00	
In $53,500 Virginia 6 per cent bonds, yielding	3,210 00	
In $7,000 Tennessee 6 per cent. bonds, yielding	420 00	
In $500 Georgia 6 per cent. bonds, yielding	30 00	
In $100 Washington 6 per cent. bonds, yielding	6 00	
		7,416 00
		38,326 14
Balance in the hands of the Treasurer, January 1, 1859		16,141 36
		$54,467 50

EXPENDITURES.

For building, furniture, and fixtures	$1,720 57	
For items common to the different objects of the Institution	11,519 04	
For publications, researches, and lectures	11,072 32	
For library, museum, and gallery of art	10,521 46	
		$34,833 39
Balance in the hands of the Treasurer January 1, 1860, including $5,000 of the *extra fund* not yet invested		19,634 11

Statement in detail of the Expenditures in 1859.

BUILDING, FURNITURE, AND FIXTURES,

Repairs and incidentals	$1,054 28	
Furniture and fixtures in common	274 28	
Furniture and fixtures for museum	135 21	
Magnetic observatory	256 80	
		$1,720 57

GENERAL EXPENSES.

Meetings of the Board	14 50	
Lighting and heating	902 68	
Postage	558 65	
Transportation and exchange	1,458 84	
Stationery	289 37	
General printing	569 60	
Apparatus	766 18	
Laboratory	68 36	
Incidentals general	570 06	
Salaries—Secretary	3,500 00	
Chief clerk	1,400 00	
Book-keeper, janitor, &c.	1,064 00	
Extra clerk hire	357 35	
		11,519 04

PUBLICATIONS, RESEARCHES, AND LECTURES.

Smithsonian Contributions	3,964 15	
Reports on progress of knowledge	1,831 19	
Other publications	686 37	
Meteorology	3,247 86	
Investigations, computations, and researches	464 05	
Lectures	879 20	
		11,072 32

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LIBRARY, MUSEUM, AND GALLERY OF ART.

Library—Cost of books	$2,530 83	
Pay of assistants	1,847 00	
Transportation	217 74	
Incidentals	25 00	
Museum—Salary of Assistant Secretary	2,000 00	
Explorations	315 65	
Collections	16 87	
Incidentals, jars, alcohol, &c.	1,115 65	
Assistants and labor	2,378 38	
Transportation	544 84	
Gallery of Art	30 00	
		10,521 46
Total expenditures		$34,883 89

The estimated income for the year 1859, inclusive of the balance in the hands of the Treasurer, was $54,495.56, and the actual income $54,467.50; showing a difference of $28.06 less than the estimate. This difference arises from the fact that in the previous reports the whole amount of $3,210 interest on Virginia stock was assumed to have been placed to the credit of the Treasurer, although Riggs & Co. retained $16.06 for commission, &c., at the time of the purchase.

In addition to the above, the interest for two years on the Washington corporation stock, amounting to $12, was considered as in the hands of the treasurer, although it had not actually been drawn.

The estimated expenditure was $38,000. The actual expenditure was $34,883.89; showing a difference of $3,166.61 less than the estimate, due principally to a less expenditure on the building, furniture, and the publications.

The amount of income above that of the expenditure was $3,492.75, which, added to the actual balance ($16,141.86) in the hands of the treasurer at the beginning of the year 1859, makes $19,634.11. It is necessary to mention that $5,000 of this belongs to the extra fund, which has not yet been invested.

The annual appropriation from Congress for keeping the museum of the exploring expedition has been expended, under the direction of the Secretary of the Interior, in assisting to pay the extra expenses of assistants and the cost of preserving and arranging the specimens.

An appropriation has also been continued during the past year by the Patent Office for the collection of meteorological statistics for the Agricultural Report.

It is believed the expenditures under these heads have been economically and judiciously made, and that the services rendered to Government have been strictly and faithfully performed.

The specimens intrusted to the care of the Institution are now undergoing a thorough examination, and, being scientifically arranged, are in a better condition to meet the wants of the naturalist, and to interest the public, than ever before.

The committee respectfully submit the following estimate of the expenditures for the year 1860:

Estimate of appropriations for the year 1860.

BUILDING, FURNITURE, AND FIXTURES.

Repairs and incidentals	$1,500 00	
Furniture and fixtures	800 00	
Magnetic observatory	350 00	
		$2,650 00

GENERAL EXPENSES.

Meetings of the Board	250 00	
Lighting and heating	1,000 00	
Postage	600 00	
Transportation and exchange	1,500 00	
Stationery	800 00	
General printing	600 00	
Apparatus	800 00	
Laboratory	100 00	
Incidentals general	500 00	
Salaries—Secretary	3,500 00	
Chief clerk, messenger, book-keeper, laborers, &c.	3,000 00	
Extra clerk-hire	500 00	
		12,650 00

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PUBLICATIONS, RESEARCHES, AND LECTURES.

Smithsonian Contributions	$6,000 00	
Reports on progress	500 00	
Miscellaneous Collections	1,000 00	
Meteorology	3,000 00	
Investigations	700 00	
Lectures	800 00	
		$12,000 00

LIBRARY, MUSEUM, AND GALLERY OF ART.

Library.—Cost of books	2,500 00	
Pay of assistants	1,500 00	
Transportation	250 00	
Incidentals	50 00	
Museum—Salary of Assistant Secretary	2,000 00	
Explorations	300 00	
Collections	200 00	
Incidentals	1,000 00	
Assistants and labor	2,000 00	
Transportation	600 00	
Gallery of art	300 00	
		10,700 00
		$38,000 00

The committee have carefully examined all the books and accounts of the Institution, for the past year, and find them to be correct.

Respectfully submitted,

J. A. PEARCE,
A. D. BACHE, } *Executive Committee.**

Report of the Executive Committee for the year 1860.

The Executive Committee respectfully submit to the Board of Regents the following report of the receipts and expenditures of the Smithsonian Institution during the year 1860, with estimates for the year 1861:

RECEIPTS.

The whole amount of Smithson's bequest deposited in the Treasury of the United States, is $515,169, from which an annual income at six per cent. is derived, of		$30,910 14
The extra fund of unexpended income is invested as follows, viz:		
In $75,000 Indiana 5 per cent. bonds, yielding	$3,750 00	
In $53,500 Virginia 6 per cent. bonds, yielding	3,210 00	
In $12,000 Tennessee 6 per cent. bonds, yielding	720 00	
In $500 Georgia 6 per cent. bonds, yielding	30 00	
In $100 Washington 6 per cent. bonds, yielding	6 00	
		7,716 00
Total income		38,626 14
Balance in the hands of the Treasurer January 1, 1860, $19,684.11, less the cost of $5,000 Tennessee bonds, $4,600		15,034 11
Total receipts		53,660 25

EXPENDITURES.

For building, furniture, and fixtures	2,424 76	
For general expenses	13,079 84	
For publications, researches, and lectures	13,852 99	
For library, museum, and gallery of art	7,781 21	
Total expenditures		37,138 80
Balance in the hands of the Treasurer January 11, 1861		$16,521 95

* General Totten, the other member of the Executive Committee, is temporarily absent in California on official duty.

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Statement in detail of the expenditures during the year 1860.

BUILDING, FURNITURE AND FIXTURES.

Building incidentals	$1,480 55	
Furniture and fixtures in general	619 85	
Furniture and fixtures for museum	824 36	
		$2,424 76

GENERAL EXPENSES.

Meetings of the Board	225 85	
Lighting and heating	987 41	
Postage	537 54	
Transportation and exchanges	2,141 86	
Stationery	898 50	
General printing	206 18	
Apparatus	784 78	
Laboratory	150 81	
Incidentals, general	755 94	
Extra clerk hire	645 97	
Salaries—Secretary	3,500 00	
Chief clerk, book-keeper, messenger, and laborers.	2,750 00	
		13,079 84

PUBLICATIONS, RESEARCHES, AND LECTURES.

Smithsonian Contributions	5,520 59	
Smithsonian Reports	770 22	
Smithsonian Miscellaneous Collections	1,181 48	
Other publications	45 89	
Meteorology	4,431 07	
Magnetic observatory	808 00	
Researches and investigations	753 00	
Lectures	892 74	
		13,852 99

LIBRARY, MUSEUM, AND GALLERY OF ART.

Cost of books and binding	2,882 19	
Pay of assistants in library	1,100 00	
Transportation and exchange for library	496 62	
Incidentals for library	41 86	
Museum, salary	2,000 00	
Transportation for museum	872 76	
Incidentals for museum	62 92	
Explorations for museum	476 45	
Collections for museum	111 23	
Gallery of art	237 18	
		7,781 21
		$37,138 80

The accounts for the year 1860 were made up to the 11th of January, 1861, instead of the first of the same month as heretofore. This difference in time was occasioned by the delay in obtaining the appropriation and interest due at the beginning of the year.

The balance in the hands of the treasurer at the commencement of the year 1860 was $19,634.11; of this, $4,600 were expended in the purchase of $5,000 Tennessee State bonds, leaving $15,084.11.

The income during the year from the original and extra fund was $38,626.14. The expenditures during 1860 were $37,138.80; leaving $1,487.84 to be added to the balance in the hands of the treasurer on the first of the year, making $16,521.95 immediately available for paying in cash the expenses of the operations of the Institution as rapidly as the bills come due.

The foregoing statement is an actual exhibit of the Smithsonian funds, irrespective of credits and disbursements which have been made in behalf of other parties. For example: the Institution has frequently advanced money to pay for the transportation of packages for other establishments, such as the Coast Survey, Patent Office,

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&c., forwarded through the Smithsonian agents; and in all such cases the money when refunded, has been credited to the appropriation from which the expenditure was originally made. Again: the use of the lecture-room has in many instances been granted for charitable purposes, without any other charge than for the gas consumed; and the money received for this has been credited on the books of the Institution to the account of "lighting and heating."

The agricultural department of the Patent Office has for several years past appended a small portion of its appropriation for the collection of meteorological statistics in connection with this Institution. During the past year the assistance from this source has been unexpectedly very much reduced; and hence, the expenditure on meteorology from the Smithsonian fund has considerably exceeded the estimate.

The annual appropriation of $4,000 from Congress, for keeping the collections of the exploring and surveying expeditions of the United States, has been expended under the direction of the Secretary of the Interior, in assisting to pay the extra expenses of assistants, and the cost of arranging and preserving the specimens. The aid thus rendered has served to diminish the cost to the Smithsonian fund of the maintenance and exhibition of the museum, although it has by no means been sufficient to defray all the expenses of these objects, as will be seen by reference to the items given under the head of the museum, in the detailed statement.

The specimens intrusted to the care of the Institution are in good condition, and the duplicates are in process of being assorted preparatory to a general distribution for scientific and educational purposes.

The committee respectfully submit the following estimates for the year 1861.

RECEIPTS.

Balance in the hands of the treasurer, January 11, 1861	$16,521
Interest on original fund	30,910
Interest on the extra fund	7,716
Total	$55,148

Estimate of Expenditures for 1861.

BUILDING, FURNITURE, AND FIXTURES.

Incidentals	$1,500 00	
Furniture and fixtures	800 00	
		2,300 00

GENERAL EXPENSES.

Meetings of the Board	$250 00	
Lighting and heating	1,000 00	
Postage	600 00	
Transportation, (general)	1,000 00	
Exchanges	1,000 00	
Stationery	800 00	
General printing	800 00	
Apparatus	800 00	
Laboratory	150 00	
Incidentals, (general)	600 00	
Extra clerk-hire	500 00	
Salaries—Secretary	3,500 00	
Chief clerk, book-keeper, messenger, laborers, &c.	3,000 00	
		18,000 00

PUBLICATIONS, RESEARCHES, AND LECTURES.

Smithsonian Contributions	6,000 00	
Smithsonian Reports	500 00	
Smithsonian Miscellaneous Collections	1,000 00	
Other publications	250 00	
Meteorology	4,000 00	
Magnetic observatory	250 00	
Researches	400 00	
Lectures	800 00	
		18,200 00

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LIBRARY, MUSEUM, AND GALLERY OF ART.

Library—Cost of books and binding	$2,500 00	
Pay of assistants in library	1,200 00	
Transportation and exchange for library	500 00	
Incidentals	50 00	
Museum—Salary	2,000 00	
Assistants and labor	1,000 00	
Transportation	550 00	
Incidentals	1,000 00	
Explorations	400 00	
Gallery of art	300 00	
		$9,500 00
		$38,000 00

The committee have carefully examined all the books and accounts of the Institution for the past year, and find them to be correct.

Respectfully submitted,

J. A. PEARCE,
A. D. BACHE,
JOS. G. TOTTEN, } *Executive Committee.*

Report of the Executive Committee for the year 1861.

The Executive Committee respectfully submit to the Board of Regents the following report of the receipts and expenditures of the Smithsonian Institution during the year 1861, with general estimates for the year 1862:

RECEIPTS.

The whole amount of Smithson's bequest deposited in the Treasury of the United States is $515,169, from which an annual income, at 6 per cent., is derived, of		$30,910 14
The extra fund of unexpended income is invested as follows, viz:		
In $75,000 Indiana 5 per cent. bonds, yielding		$3,750 00
In $53,500 Virginia 6 per cent. bonds, yielding nothing during 1861.		
In $12,000 Tennessee 6 per cent. bonds, yielding nothing during 1861.		
In $500 Georgia 6 per cent., yielding nothing during 1861.		
In $100 Washington 6 per cent., will be paid, but not collected in 1861.		
Total income		34,660 14
Balance in the hands of the Treasurer, January 11, 1861		16,521 95
Total receipts		$51,182 09

EXPENDITURES.

For building, furniture, and fixtures	$1,784 62	
For general expenses	10,899 69	
For publications, researches, and lectures	10,764 96	
For library, museum, and gallery of art	5,737 65	
Total expenditure		29,186 92
Balance in the hands of the Treasurer January 9, 1862		$22,045 17

Statement in detail of the expenditures during 1861.

BUILDING, FURNITURE, AND FIXTURES.

Building incidentals	906 19	
Furniture and fixtures in general	177 26	
Furniture and fixtures for museum	651 17	
		$1,784 62

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GENERAL EXPENSES.

Meetings of the Board	$66 00	
Lighting and heating	1,074 94	
Postage	389 08	
Transportation, general	656 24	
Exchanges	793 07	
Stationery	194 60	
General printing	50 16	
Apparatus	711 70	
Laboratory	161 42	
Incidentals, general	400 38	
Extra clerk-hire	434 10	
Salaries—Secretary	3,500 00	
Chief clerk, book-keeper, messenger, and laborers	2,468 00	
		$10,899 69

PUBLICATIONS, RESEARCHES, AND LECTURES.

Smithsonian Contributions	3,936 85	
Smithsonian Reports	915 00	
Smithsonian Miscellaneous Collections	1,627 63	
Other publications	310 50	
Meteorology	3,059 04	
Researches and investigations	111 00	
Lectures	804 94	
		10,764 96

LIBRARY, MUSEUM, AND GALLERY OF ART.

Cost of books and binding	915 78	
Pay of assistants in library	1,141 00	
Transportation for library	126 87	
Incidentals for library	23 12	
Museum—salary of Assistant Secretary	2,000 00	
Transportation for museum	406 88	
Incidentals for museum	477 35	
Explorations	482 25	
Gallery of art	214 95	
		5,787 65
Total expenditures		$29,136 92

On account of the delay in obtaining the interest due from the United States at the beginning of the year, the foregoing accounts for 1861 were made up to the 9th of January, 1862.

It will be seen that the whole income during the year 1861 was $34,660.14, instead of the estimated income of $38,626.14. This difference is caused by the failure of Virginia, Tennessee, and Georgia to pay the interest on their bonds, and by the Treasurer not having as yet collected the $6 from the corporation of Washington.

The expenditures during 1861 were $29,136.92, leaving $5,523.22 to be added to the balance in the hands of the Treasurer on the 11th of January, 1861, making $22,045.17 in hand for paying in cash the expenses of the operations of the Institution as rapidly as the bills are presented.

The foregoing statement is an actual exhibit of the Smithsonian funds, irrespective of credits and disbursements, which have been made in behalf of other parties. For example—the Institution frequently advances money to pay for the transportation of packages in connection with its general system of exchange, and, in all such cases, the money, when refunded, is credited to the appropriation from which the expenditure was originally made. Again: the use of the lecture room is, in many instances, granted for charitable and literary purposes without any other charge than that for the gas consumed, and the pay of the necessary attendants, the whole amounting to ten dollars each night. Half of this is credited on the books of the Institution to the account of "lighting and heating," and the other half paid directly to the persons employed.

The appropriation from Congress for the preservation of the collections of the exploring and surveying expeditions of the United States has been expended as usual,

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under the direction of the Secretary of the Interior, in assisting to pay the expenses of extra assistants in the museum, and the cost of arranging and preserving the specimens. The sum received from this source has been credited to the museum, and has served to diminish the amount of expenditures for that object on the part of the Institution, although it has by no means been sufficient to defray all the expenses to which the establishment has been subjected, on account of the preservation and public exhibition of the specimens.

The articles intrusted to the care of the Institution are in good condition, and the work of the distribution of the duplicates of the Government as well as those of the Institution is in active progress.

A part of the expenditure on the building is due to the introduction of the Potomac water, but a further expenditure during the present year will be required for the same purpose.

Although the income of the Institution during 1861 has been nearly $4,000 less than was estimated at the beginning of the year, yet the Secretary, by a proper curtailment of the operations in view of the unsettled condition of the times, has reduced the expenditures to $5,000 less than the actual income. All the outstanding obligations of the Institution for works which have been commenced would not exceed $2,000, so that the establishment could, to-day, wind up its affairs with $20,000 in cash, besides the undiminished original bequest of Smithson in the Treasury of the United States, and $141,000 invested in State stocks, from which it is hoped, at some future time, the full interest may be received.

It is impossible, in view of the uncertainty of the future, to present even an approximate estimate of the expenditures during 1862. The committee would, however, submit the following, as a general guide to the Secretary:

Estimated income		$34,666 14
Estimated expenditure:		
For building, furniture, and fixtures	$2,000 00	
For general expenses	10,500 00	
For publications, researches, and lectures	10,500 00	
For library, museum, and gallery of art	9,000 00	
		32,000 00

The committee have carefully examined the books and accounts of the Institution, for the past year, and find them to be correct.

Respectfully submitted.

J. A. PEARCE,
A. D. BACHE,
J. G. TOTTEN,
Executive Committee.

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REPORT OF THE EXECUTIVE COMMITTEE.

The Executive Committee respectfully submit to the Board of Regents the following report of the receipts and expenditures of the Smithsonian Institution during the year 1862, with general estimates for the year 1863:

General Statement.

RECEIPTS.

The whole amount of Smithsonian bequest deposited in the treasury of the United States is $515,169, from which an annual income at six per cent. is derived of	$30,910
The extra fund of unexpended income is invested as follows, viz:	
In 75,000 Indiana 5 per cent. bonds, yielding	3,750
In 53,500 Virginia 6 per cent. bonds, yielding nothing in 1862.	
In 12,000 Tennessee 6 per cent. bonds, yielding nothing in 1862.	
In 500 Georgia 6 per cent. bonds, yielding nothing in 1862.	
In 100 Washington city 6 per cent. bonds, yielding during 1862.	6
Premium on sale of $1,875 gold, (interest) paid on Indiana bonds, July 1, at 40½	759
Total income	35,425
Balance in the hands of the treasurer, January, 1862	22,045
Total receipts	57,470
Total expenditure	27,961
Balance in the hands of the treasurer, January, 1863	$29,509

EXPENDITURES.

For building, furniture, and fixtures	$2,237
For general expenses	11,674
For publications, researches, and lectures	7,744
For library, museum, and gallery of art	6,304
Total expenditure	$27,961

Statement in detail of the expenditures of 1862.

BUILDING, FURNITURE, AND FIXTURES.

Building incidentals	$1,672 34	
Furniture and fixtures in general	80 02	
Furniture and fixtures for museum	485 30	
		$2,237

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GENERAL EXPENSES.

Meetings of the Board	$81 00	
Lighting and heating	1,142 26	
Postage	353 36	
Transportation, general	733 10	
Exchanges	1,550 32	
Stationery	281 38	
General printing	441 46	
Apparatus	119 06	
Laboratory	408 45	
Incidentals, general	315 02	
Extra clerk hire	405 00	
Salaries, secretary	3,500 00	
Chief clerk, bookkeeper, messenger, &c	2,344 00	
		11,674 41

PUBLICATIONS, RESEARCHES, AND LECTURES.

Smithsonian Contributions	$932 97	
Smithsonian Reports	219 88	
Smithsonian Miscellaneous Collections	3,774 25	
Meteorology	1,963 08	
Researches and investigations	94 75	
Lectures	759 51	
		7,744 44

LIBRARY, MUSEUM, AND GALLERY OF ART.

Cost of books and binding	$1,513 63	
Pay of assistants in library	1,215 00	
Transportation for library	346 76	
Incidentals for library	44 25	
Museum, salary of assistant secretary	2,000 00	
Transportation for museum	354 54	
Incidentals for museum	146 59	
Explorations	555 29	
Gallery of art	128 50	
		6,304 56
Total expenditures		$27,961 07

It will be seen that the whole income during the year 1862 was $35,425 51, instead of the estimated income, $34,666 14. This difference is due to the receipt of $759 37 as premium on the gold in which the first half year's interest on the Indiana bonds was paid.

The expenditures during 1862 were $27,961 07, leaving $7,464 44 to be added to the balance in the hands of the treasurer on the 9th of January, 1862.

The amount of bills for work already contracted for will not exceed $2,500.

The foregoing statement is an actual exhibit of the Smithsonian funds, irrespective of credits and payments which have been made in behalf of other parties. For example, the Institution during the past year has paid several bills for work done on account of the government, the amount of which has been refunded and credited to the appropriations from which the expenditure was originally made.

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The appropriation from Congress for the preservation of the collections of the exploring and surveying expeditions of the United States has been expended, as heretofore, under the direction of the Secretary of the Interior, in assisting to pay the expenses of extra assistants in the museum, and the cost of arranging and preserving the specimens. The sum received from this source has been credited to the museum, and has served to diminish the amount of expenditures for that object on the part of the Institution, although it has not been sufficient to defray all the expenses on account of the preservation and public exhibition of the specimens.

The articles intrusted to the care of the Institution are in good condition, and the work of the distribution of the duplicates of the government as well as those of the Institution is still in progress.

A part of the expenditure on the building is due to refitting the apparatus room, and re-covering, with tin, the northern portion of the roof of the west connecting range which was blown off during the storm of February 24.

From the foregoing statements it will appear that the financial affairs of the Institution are still in a prosperous condition, and that the Board of Regents could resign their trust to-day, with the undiminished original bequest of Smithson in the treasury of the United States, with over one hundred thousand dollars on hand or in secure investments, and with $66,000 in southern State stocks, from which it is hoped at some future time interest may be received.

The committee submit the following approximate estimates for the year 1863

Estimated income..... $34,666 1:

ESTIMATED EXPENDITURE.

For building, furniture, and fixtures.....	$2,000	
For general expenses.....	10,500	
For publications, researches, and lectures.....	10,500	
For library, museum, and gallery of art.....	9,000	
		$32,000

The committee have carefully examined the books and accounts of the Institution for the past year, and find them to be correct.

Respectfully submitted.

JOS. G. TOTTEN.
A. D. BACHE.

FEBRUARY, 1863.

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REPORT OF THE EXECUTIVE COMMITTEE.

The Executive Committee respectfully submit to the Board of Regents the following report of the receipts and expenditures of the Smithsonian Institution during the year 1863, with estimates for the year 1864:

General Statement.

RECEIPTS.

The whole amount of the Smithson bequest deposited in the treasury of the United States is $515,169, from which an annual income at 6 per cent. is derived of	$30,910 14
The extra fund of unexpended income is invested as follows, viz:	
In $75,000 Indiana 5 per cent. bonds, yielding (less United States tax)	3,749 50
In $53,500 Virginia 6 per cent. bonds.	
In $12,000 Tennessee 6 per cent. bonds.	
In $500 Georgia 6 per cent. bonds.	
In $100 Washington city 6 per bonds, yielding	6 00
Total income	34,665 64
Balance in the hands of the treasurer, January, 1863	29,509 61
Total receipts	64,175 25

EXPENDITURES.

For building, furniture, and fixtures	$2,111 78	
For general expenses	11,688 69	
For publications, researches, and lectures	10,761 65	
For library, museum, and gallery of art	7,259 23	
		31,821 35
Balance in the hands of the treasurer, January, 1864		32,353 90

STATEMENT IN DETAIL OF THE EXPENDITURES OF 1863.

Building incidentals	$1,598 79	
Furniture and fixtures	512 99	
		$2,111 78
Meetings of the Board of Regents	104 50	
Lighting	343 71	
Heating	1,090 75	
Postage	421 46	
Transportation, general	374 05	
Exchanges	1,357 76	
Stationery	486 09	

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General printing	$3 50	
Apparatus	531 98	
Laboratory	129 59	
Incidentals, general	584 65	
Extra clerk-hire	371 65	
Salaries, secretary	3,500 00	
Salaries, chief clerk, bookkeeper, laborers, &c	2,389 00	
		$11,688 69
Smithsonian contributions	2,545 48	
Smithsonian reports	583 85	
Smithsonian miscellaneous collections	3,535 88	
Smithsonian and other publications	441 15	
Meteorology	2,410 97	
Researches and investigations	150 00	
Lectures	1,094 32	
		10,761 65
Cost of books and binding	1,844 65	
Pay of assistants in library	1,100 00	
Transportation for library	290 35	
Incidentals for library	24 15	
Museum, salary of assistant secretary	2,000 00	
Transportation for museum	695 29	
Incidentals for museum	395 40	
Explorations for museum	762 39	
Gallery of art	147 00	
		7,259 23
		$31,821 35

The whole income during the year 1863 was $34,665 64, corresponding with the estimate in the report for 1862. The expenditures during the year 1863 were $31,821 31, leaving $2,844 33 to be added to the balance in the hands of the treasurer at the beginning of the year.

The amount of bills outstanding will not exceed $2,000.

The foregoing statement is an actual exhibit of the Smithsonian funds irrespective of credits and payments made in behalf of other parties. The Institution has during the year paid several bills for work done and articles purchased on account of the government, part of which has been refunded and credited to the appropriation from which the expenditure was originally made. Those which have been refunded are as follows: $476 87 from the Surgeon General's office for books purchased in Europe through the agency of the Institution; and $37 from the Naval Observatory for transportation. In addition to these, several expenditures have been made on account of the Light-house Board for photometrical apparatus, and experiments in the laboratory, which have not yet been refunded.

Messrs. Rice & Kendall, of Boston, have also refunded $93 80 for paper purchased of them remaining in their hands not used.

The appropriations from Congress for the preservation of the collections and the distribution of the duplicate specimens of the exploring and surveying expeditions of the government have been expended, as heretofore, under the direction of the Secretary of the Interior in assisting to pay the expenses of assistants in the museum, and the cost of arranging, labelling, and preserving the specimens. The sums thus received have been credited to the museum, and have served to diminish the apparent amount of expenditures for that object.

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The estimated expenditures for 1863 were as follows:

For building, furniture, and fixtures	$2,000
For general expenses	10,500
For publications, researches, and lectures	10,500
For library, museum, and gallery of art	9,000
Total	$32,000

The actual expenditure on the building is very nearly the same as the amount appropriated.

For general expenses the amount is larger than the estimate, and this is due to the increased cost of materials.

For publications, &c., the actual expenditure is nearly the same as the estimate.

For library, museum, and gallery of art, the expenditure is nearly three thousand dollars less than the estimate, but this is on account of the expenditure on the collections of the remainder of an appropriation from Congress for the distribution of the specimens.

For the year 1864 the same estimates are recommended as those made for 1863.

The committee have examined the books and accounts of the Institution for the past year, and find them to be correct.

Respectfully submitted.

A. D. BACHE,
RICHARD WALLACH,
Committee.

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REPORT OF THE EXECUTIVE COMMITTEE.

The Executive Committee respectfully submit to the Board of Regents the following report of the receipts and expenditures of the Smithsonian Institution during the year 1864:

RECEIPTS.

The whole amount of Smithson's bequest deposited in the treasury of the United States is $515,169, from which an annual income of 6 per cent. is derived of		$30,910 14
The extra fund of unexpended income is invested as follows, viz:		
$75,000 in Indiana 5 per cent. bonds, yielding in 1864		3,750 00
$53,500 in Virginia 6 per cent. bonds, yielding in 1864		
$12,000 in Tennessee 6 per cent. bonds, yielding in 1864		
$500 in Georgia 6 per cent. bonds, yielding in 1864		
$100 in Washington 6 per cent. bonds, yielding in 1864		6 00
		34,666 14
Balance in hands of treasurer, January, 1864, and interest due from government		32,353 90
		67,020 04

EXPENDITURES.

For building, furniture, and fixtures	$2,620 77	
For general expenses	14,071 50	
For publications, researches, and lectures	11,907 48	
For library, museum, and gallery of art	8,936 21	
		37,535 96
Balance in treasury and due from government January, 1865		$29,484 08

STATEMENT IN DETAIL OF THE EXPENDITURES OF 1864.

BUILDING.

Building, incidentals	$1,066 32	
Furniture and fixtures in general	804 45	
Furniture and fixtures for museum	750 00	
		$2,620 77

GENERAL EXPENSES.

Meetings of the Board	131 50	
Lighting and heating	1,816 36	
Postage	408 38	
Transportation, general	868 09	
Exchanges	2,753 76	
Stationery	502 77	
General printing	157 76	

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Apparatus	102 74	
Laboratory	160 78	
Incidentals, general	631 36	
Extra clerk-hire	599 00	
Salaries, Secretary	3,500 00	
Salaries, chief clerk, bookkeeper, messenger, and laborers	2,439 00	
		14,071 50
PUBLICATIONS, ETC.		
Smithsonian Contributions	2,224 57	
Smithsonian Reports	547 00	
Smithsonian Miscellaneous Collections	6,449 06	
Other publications	210 00	
Meteorology	1,339 15	
Researches	125 00	
Lectures	1,012 70	
		11,907 48
LIBRARY AND MUSEUM.		
Cost of books and binding	1,953 67	
Assistants in library	1,291 66	
Transportation for library	200 00	
Museum, salary of Assistant Secretary	2,000 00	
Museum, assistants	1,096 56	
Museum, transportation	400 00	
Museum, incidentals	1,080 31	
Explorations	797 76	
Gallery of art	116 25	
		8,936 21
Total expenditure		$37,535 96

From the foregoing it will be seen that the whole income during the year 1864 was $34,666 14, and that the expenditures during the same period were $37,535 96, exhibiting for the *first time*, in the account of the current operations, an excess of the latter over the former of $2,869 82.

According to the statement of the Secretary, the cause of this excess of the expenditure was the constant increase in prices of all the articles used in the operations of the Institution, particularly in printing and paper, and the purchase of gold to defray the expense of the foreign agencies.

To meet contingencies of this kind, however, as well as to carry on all the operations for cash, there had been accumulated in the hands of the treasurer at the beginning of the year the sum of $32,353 90. The unexpended balance, therefore, now in the hands of the treasurer is $29,484 08.

The appropriation by Congress for the preservation of the collections of the exploring and surveying expeditions of the United States has been expended as heretofore, under the direction of the Secretary of the Interior, in assisting to pay the expenses of extra assistants in the museum, and the cost of arranging and preserving the specimens. The articles intrusted to the care of the Institution by government are in good condition, and the distribution of the duplicate specimens belonging to government, as well as those of the Institution, has been industriously prosecuted during the year.

From the examination made by the committee it appears that the affairs of the Institution are in a prosperous condition; that all the operations have been

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continued with unabated energy; that notwithstanding the depreciation of the value of the income, the expenditures have but little exceeded the current receipts, and that provision had been made even for this contingency by the previous accumulations in the hands of the treasurer.

The Executive Committee are informed by the Secretary that the remainder of the legacy of Smithson, amounting to about $26,000, has been received in coin, and deposited with the Treasurer of the United States.

In conclusion, it may be stated that the whole amount of the Smithsonian fund, including the original legacy and the additions which have since been made to it, together with the balance in the hands of the treasurer, and the State stocks estimated at their present market value, amounts to about $690,000.

The committee agree with the Secretary in opinion that, as far as possible, the active operations of the Institution should be continued, and the curtailments rendered necessary by the depreciation of the currency be made in expenditures for those objects which can most readily be postponed. For the year 1865 the same estimates are submitted as those for 1864, with such diminution as the Secretary may deem it advisable to make.

The committee have carefully examined the accounts of the Institution and the books as posted by Mr. Randolph for the past year, and find them to be correct.

Respectfully submitted.

RICHARD WALLACH, *Chairman.*

FEBRUARY, 1865.

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REPORT OF THE EXECUTIVE COMMITTEE.

The Executive Committee respectfully submit to the Board of Regents the following report of the receipts and expenditures of the Smithsonian Institution during the year 1865:

RECEIPTS.

The whole amount of Smithson's bequest deposited in the treasury of the United States is $515,169, from which an annual income at 6 per cent. is derived, of		$30,910 14
The extra fund of unexpended income is invested as follows:		
$75,000 in Indiana 5 per cent. bonds, yielding in 1865		3,750 00
$53,500 in Virginia 6 per cent. bonds, yielding in 1865.		.....
$12,000 in Tennessee 6 per cent. bonds, yielding in 1865.		.....
$500 in Georgia 6 per cent. bonds, yielding in 1865.		.....
$100 in Washington 6 per cent. bonds, yielding in 1865 $6, (but not collected.)		
Premium for sale of coin received as interest from the United States		20,333 79
Interest on temporary deposits with the United States Treasurer.		478 36
Total receipts during 1865		55,472 29
Balance in hands of the treasurer January, 1865		29,484 08
		84,956 37

EXPENDITURES.

For building and furniture	$39,121 77	
For general expenses	14,149 82	
For publications and researches	9,528 03	
For library, museum, and gallery of art	8,438 12	
		71,237 74
Balance in the hands of the treasurer January, 1866		13,718 63

STATEMENT IN DETAIL OF THE EXPENDITURES DURING 1865.

Building:		
Reconstruction and incidentals	$37,930 71	
Furniture and fixtures	1,191 06	
		$39,121 77
General expenses:		
Meetings of the board, (hack-hire, &c.)	123 64	
Lighting and heating	1,207 95	
Postage	568 61	
Transportation, general, (freights)	1,084 13	
Exchanges, (books sent and received to institutions, expenses of agents, &c.)	1,453 63	

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Stationery	539 01	
General printing, (circulars, labels, &c.)	270 00	
Apparatus	2 50	
Laboratory, (chemicals, fixtures, glass, &c)	135 26	
Incidentals, general, (hardware, tools, materials for cleaning, packing twine, general repairs, &c.)	1,683 89	
Extra clerk-hire, (copying)	273 20	
Salaries, (Secretary, chief clerk, book-keeper, messenger, watchmen, and laborers)	6,808 00	
		14,149 82
Publications:		
Smithsonian Contributions to Knowledge	5,651 18	
Smithsonian Miscellaneous Collections	2,113 84	
Smithsonian reports	728 00	
Other publications	207 51	
Meteorology	827 50	
		9,528 03
Library and museum:		
Cost of books	611 86	
Assistants in library	1,300 00	
Transportation for library, (freights)	100 00	
Museum, salary of assistant secretary, and assistants in museum	4,774 14	
Incidentals for museum, (alcohol, mounting specimens, &c.)	954 12	
Transportation for museum, (freights)	500 00	
Gallery of art, (engravings, frames, &c.)	198 00	
		8,438 12
		71,237 74

The foregoing statement shows the expenditure during the year, and the balance in the hands of the treasurer. The receipts, however, did not actually come into the hands of the treasurer in full from the government until the 11th of January, 1866, although credited for 1865.

In accordance with the decision of the Solicitor of the Treasury, the interest on the Smithsonian fund, due 1st of January and 1st of July, 1865, and the 1st of January, 1866, was paid by the Secretary of the Treasury in coin, which, being sold at the current prices, yielded the following sums, viz:

1865.			
April 28.	Sale of $15,455 07, at 48¾, yielded	$7,534 34	
	Less brokerage and United States tax	61 64	
			$7,472 70
Aug. 8.	Sale of $15,455 07, at 43½, yielded	6,722 96	
	Less brokerage and United States tax	60 82	
			6,662 14
1866.			
Jan. 31.	Sale of $15,455 07, at 40½, yielded	6,259 30	
	Less brokerage and United States tax	60 35	
			6,198 95
			20,333 79

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This sum is placed among the receipts for the past year, which, together with the balance in the hands of the treasurer at the end of the previous year, made the total available funds $84,956 37 for the year 1865.

The incidental expenses and the cost of the care of the museum are nearly the same as in 1864, but in the previous year $4,000 were received from Congress to defray the expenses, in part, of the care of the government collections of the exploring expeditions, while, owing to the failure of the appropriation bill, but $2,000 were received for this purpose during 1865.

The great expenditure, therefore, of the year has been on account of the building, the particulars of which will be given in the report of the building committee.

The appropriation received for the preservation of the collections of the exploring expedition of the United States, has been expended, as heretofore, under the direction of the Secretary of the Interior, in assisting to pay the expenses of extra employés in the museum, and the cost of arranging and preserving the articles. The specimens intrusted to the care of the Institution by government are in a good condition, and the distribution of duplicates to other museums has been continued during the year.

From the examination made by the committee it appears that, notwithstanding the loss and inconvenience in consequence of the fire, the operations of the establishment have been continued with unabated energy, and that especially the foreign correspondence and exchanges have been increased rather than diminished during the past year.

It appears from the statement of the Secretary, and the accounts rendered by Riggs & Co., bankers of the Institution, that the remainder of the legacy of Smithson, which amounted to $26,210 63 in gold, was sold at a premium from 105 to 107¼ per cent., yielding, after deducting the cost of sale and United States tax, $54,165 38. This amount was expended in the purchase of United States bonds bearing 7 3/10 per cent. interest at par. The following is a detailed statement of the whole transaction:

1864.		£	s.	d.
June 11.	The amount received from Fladgate, Clarke & Finch, attorneys, London, as the residuary legacy of James Smithson, was	5,262	0	3
	This amount was deposited with George Peabody & Co., bankers, London, who allowed interest on it to the 5th of March, 1865	153	19	4
		5,415	19	7

This amount was equivalent to $26,210 63 in gold, which was sold by Riggs & Co., under the direction of the Secretary of the Institution, as follows:

$10,000 00	at 207¼		$20,725 00	
15,000 00	at 206 7/8		31,031 25	
1,000 00	at 207		2,070 00	
210 63	at 205		431 79	
26,210 63			54,258 04	
	Less brokerage, ¼	$65 53		
	Less United States tax, 1/10	27 13		
			92 66	
	Net amount realized from sale of gold			$54,165 38

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1865.		
February 17.	United States bonds bearing 7 3/10 per cent. interest were purchased at par for.....	54, 150 00
	Balance, which could not be invested on account of there being no bonds for less than $50.....	15 38

After the Secretary had purchased these bonds and deposited them for safe-keeping with the Treasurer of the United States, it was claimed by the Secretary of the Treasury that this money was *not under the control of the Regents* of the Institution, inasmuch as the original act of Congress of 1846, establishing the Institution, referred to only so much of the bequest of Smithson as was then in the treasury of the United States, and that a special act of Congress would be required to apply this money, or the interest on it, to the uses of the Institution. The Executive Committee would therefore recommend that an application be made to Congress for such a disposition of this money.

It is impossible to make at this time an exact estimate of expenditures for the year 1866. The committee would therefore recommend that $34,060, the regular income of the Institution, be devoted to the maintenance and current expenses of the operations of the establishment, and that the $13,724 63, balance in the hands of the treasurer on the 1st January, 1866, together with the premiums which may be received for the sale of coin, be applied to the reconstruction of the building.

The committee have carefully examined the accounts of the treasurer, and the books as posted by Mr. Randolph for the past year, and find them to be correct.

In conclusion, it appears that the entire bequest of Smithson remains undiminished in the treasury of the United States, and that all the expenditures, from the organization of the establishment to the present time, have been made exclusively from the interest of the original sum, and from the income on accrued interest invested in State stocks.

Respectfully submitted.

RICHARD WALLACH.
RICHARD DELAFIELD,
Executive Committee.

WASHINGTON, *March*, 1866

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REPORT OF THE EXECUTIVE COMMITTEE.

The executive committee respectfully submit the following report in relation to the funds of the Institution, the receipts and expenditures for the year 1866, with estimates for the year 1867.

Statement of the fund.

The original amount received as the bequest of James Smithson deposited in the treasury of the United States as a trust fund, by act of Congress, approved August 10, 1846, section. 2					$515,169 00
The residuary legacy of James Smithson, received in 1865, invested in United States 7.30 bonds					26,210 63
Extra fund, derived from saving of interest, &c., invested in stock, viz:					
United States 7.30 bonds					27,939 37
	Par value.	Cost.	Present value.	Interest unpaid.	
Indiana 5 p. cent.	$75,000	$63,000 00	$69,750	.....	
Virginia 6 p. cent.	53,500	49,832 50	31,565	$17,655	
Tennessee 6 p. cent.	15,000	11,167 50	9,300	.....	
Georgia 6 p. cent.	500	500 00	500	165	
Washington 6 p. cent.	100	100 00	100	.....	
	144,100	124,600 00	111,215	.....	111,215 00
Total productive and unproductive capital					$680,534 00

Receipts and expenditures during the year 1866.

RECEIPTS.

Balance in hands of the Treasurer, January, 1866	$13,718 63
Interest on the original bequest of Smithson, viz., 6 per cent. on $515,169	30,910 14
Interest on Indiana stock, viz., 5 per cent. on $75,000	3,750 00
Interest on Tennessee stock, viz., 6 per cent. on $15,000	900 00
Premium for sale of coin, &c	40,691 26
Interest on temporary deposit with United States Treasurer	380 82
Proceeds of sale of $600, coupons, for interest due on Tennessee stock	402 00
Total funds available for the year 1866	90,752 85

EXPENDITURES.

For building and furniture	$36,428 66	
" general expenses	11,577 24	
" publications and researches	13,109 95	
" library, museum, and literary exchanges	6,745 77	
		67,861 62
Balance in hands of the Treasurer, January, 1867		$22,891 23

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Statement in detail of the expenditures during the year 1866.

BUILDING.

Reconstruction of parts injured or destroyed by fire,	$33,291 81	
Repairs and incidentals to old parts	2,181 54	
Furniture and fixtures	955 31	
		$36,428

GENERAL EXPENSES.

Meetings of the board: travelling expenses and hack hire	127 00	
Lighting and heating	1,555 54	
Postage	452 84	
Stationery	485 14	
Incidentals: hardware, tools, materials for cleaning, &c.	1,213 12	
Salaries: Secretary, chief clerk, bookkeeper, clerks, janitor, messenger, and laborers	7,743 60	
		11,577

PUBLICATIONS, RESEARCHES, ETC.

Smithsonian Contributions to Knowledge	3,776 17	
Smithsonian Miscellaneous Collections	5,702 67	
Smithsonian Annual Report	1,377 80	
General printing	243 27	
Meteorology	1,017 90	
Apparatus for experiments and researches	496 85	
Laboratory, chemicals, &c.	122 98	
Exploration	372 31	
		13,109

LIBRARY, MUSEUM, AND LITERARY AND SCIENTIFIC EXCHANGE.

Cost of books	873 24	
Assistants in library, (January to July)	600 00	
Literary and scientific exchanges	2,009 33	
Assistants in museum, and incidentals for collections,	1,568 04	
Freights on specimens, books, &c., for museum and library	1,695 16	
		6,745

Total expenditures during the year 1866 ..... $67,861

The foregoing statement is an actual exhibit of the Smithsonian funds, i spective of credits and payments which have been made in behalf of o parties. For example, the Institution during the past year has paid several for work done on account of the government, the amount of which has be funded and credited to the appropriations from which the expenditure was

The Commissioner of Agriculture has continued to pay one-half of the s of the meteorological clerk, who has been engaged during the year in prep

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the abstracts from the reports of the observers for the Monthly Bulletin of the Agricultural Department.

The appropriation received for the preservation of the collections of the exploring expeditions of the United States has been expended as heretofore, under the direction of the Secretary of the Interior, in assisting to pay the expenses of employés in the museum, and the cost of arranging and preserving the articles. This appropriation is $4,000 annually, but during the last year an additional sum of $2,000 was received, due for the year 1865, which had not been paid on account of the failure of the appropriation bill to pass Congress at the usual time.

The specimens intrusted to the care of the Institution are in a good condition, although on account of the unfinished state of the building much care and labor have been required to preserve them from the effects of dampness.

The committee have examined three hundred and eighty-two vouchers, embracing several thousand items, for payments during the year, amounting collectively to $75,211 35. All these vouchers are for moneys actually expended, and for legitimate purposes of the Institution, and are in the form which has heretofore been in use. The committee, however, would advise that in future the following rules, similar to those in use by government, be adopted:

1. Vouchers to be made out on blanks furnished by the Institution.

2. All receipts for money paid to be signed by a principal, and not by an agent unless legally authorized.

3. Each voucher to be complete in itself; no payments to be made on a running account.

During the year the State of Tennessee made arrangements to issue six per cent. coupon bonds to pay off the arrearage of interest which had accumulated during the war. The claims for interest to be converted into these new bonds were limited to amounts of not less than $1,000. As the interest due the Institution was $3,600, Mr. Riggs was instructed to sell the odd $600 worth of coupons and convert the remaining $3,000 into stock. The sale of these coupons yielded $402, which sum has been credited in the receipts of the Institution for the year, and three bonds of one thousand dollars each, added to the permanent investment.

It is impossible, until it is known what further action the board wi l take in regard to the disposition of the stocks, to give a definite estimate of the receipts and expenditures during the present year. The following, however, may be considered as an approximation sufficiently exact for the general appropriations for the operations of the Institution, and the continuance of the work upon the building:

Estimates for the year 1867.

RECEIPTS.

Balance in hand January, 1867	$22,891 23
Interest on original bequest	30,910 14
Probable premium on coin	10,000 00
Interest on $54,150 in United States 7.30 bonds, unpaid coupons from February 15, 1865, to February 15, 1867	7,905 90

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Coupons due on same August 15, 1867	$1,976 47
Interest on Indiana 5 per cent. stock	3,750 00
Interest on Tennessee 6 per cent. stock	900 00
Interest on Washington 6 per cent. stock for 1863–'4–'5–'6 and –'7	30 00
Total available income	78,363 74

It is proposed to apply this as follows.

1. For the operations and support of the Institution, viz: Publications, researches, literary and scientific exchanges, museum, salaries, and general expenses	$40,000 00
2. For the reconstruction of the building	38,363 74
	78,363 74

The income of $78,363 74 above stated does not include any interest on the Virginia and Georgia stocks. Their value at the present time is about $32,000, being the amount of the unproductive funds of the Institution.

The Indiana stock yields but five per cent. on the par value. It can now be sold and lent to the United States at six per cent., which will increase the annual income from this source at least $300.

The Georgia and Washington stocks can now be sold at par, and the proceeds lent to the United States will increase the annual income from this source at least $30.

The Tennessee stock at present is worth about 62 per cent. on its par value. It pays 6 per cent. on the par value, and about 9.6 per cent. on the market value.

The Virginia stock is worth at the present time about 59 per cent. on the par value, and pays no interest. A large amount of the debt of this State is secured by stocks in the railroads and other internal improvements amounting to many millions, and it is therefore considered most advantageous to retain this stock until it commands a more favorable price.

The committee, in conclusion, have the satisfaction of reporting to the regents the fact that the entire bequest of Smithson remains undiminished in the treasury of the United States; that all the expenditures from the organization of the establishment to the present time, including nearly $400,000 on the building, have been made exclusively from the income derived from the bequest, while at the same time the efficiency of the Institution has been increased by an extra fund of upwards of $100,000.

RICHARD DELAFIELD,
RICHARD WALLACH,
Executive Committee.

NOTE.—Since the presentation and adoption of this report, by authority of the Board, the United States 7.30's, the Indiana, Georgia, and Tennessee stocks have been sold, and the proceeds added to the permanent capital, increasing it from $515,169 to $650,000.

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REPORT OF THE EXECUTIVE COMMITTEE.

The Executive Committee respectfully submit the following report in relation to the funds of the Institution, the receipts and expenditures for the year 1867, and the estimates for the year 1868:

STATEMENT OF THE FUND.

The original amount received as the bequest of James Smithson, of England, deposited in the treasury of the United States, in accordance with the act of Congress of August 10, 1846		$515,169 00
The residuary legacy of Smithson, received in 1865, deposited in the treasury of the United States in accordance with the act of Congress of February 8, 1867		26,210 63
Total bequest of Smithson		541,379 63
Amount deposited in the treasury of the United States, as authorized by the act of Congress of February 8, 1867, and directed by the Board of Regents, derived from part of savings of income and increase of value of investments		108,620 37
Total permanent Smithson fund in the treasury of the United States		$650,000 00
In addition to the above there remains of the extra fund derived from savings of income, &c., Virginia State 6 per cent. bonds for	$53,500 00	
Also, additional Virginia bonds issued for unpaid interest to January 1, 1867	19,260 00	
Par value		$72,760 00

Present value, about $30,000.

Receipts and expenditures for 1867.

RECEIPTS.

Interest on the original bequest of Smithson, viz: 6 per cent. on $515,169	$30,910 14	
Interest on the amount added to the original principal in the United States treasury, authorized by act of Congress February 8, 1867, viz: February 19, 1867, $34,831; February 27, $30,544; April 1, $68,906 25	6,420 68	
Interest on United States 7-30 bonds, from February 15, 1865, to February 19, 1867, on $54,150	7,907 00	
Interest on Virginia bonds, viz: 4 per cent. on $53,500, to December 31, 1867, (less brokerage)	2,033 00	
Interest on Washington city bond, viz: 6 per cent. on $100 to July 1, 1867, (4½ years)	27 00	

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Sales of bonds and stocks, viz:			
$54,150 United States 7-30s	$57,468 00		
15,000 Tennessee 6s	9,586 78		
75,000 Indiana 5s	68,906 25		
500 Georgia 6s	358 71		
100 Washington 6s	100 00		
		136,419 74	
Sale of coin interest		14,255 41	
Sale of publications and old and useless material		527 74	
Total receipts in 1867			$198,500 7
Balance on hand, January, 1867			22,891 2
Total amount available in 1867			221,391 9

EXPENDITURES.

Amount added to the original bequest of Smithson, in the treasury of the United States, authorized by the act of Congress of February 8, 1867, and directed by the Regents, to increase the principal to $650,000, viz: residuary legacy of Smithson	$26,210 63		
Additional deposits	108,620 37		
		$134,831 00	
Expenses for the year 1867—			
Building and furniture	38,650 74		
General expenses	12,488 84		
Publications and researches	10,030 25		
Library, museum, and exchanges	13,905 55		
Total expenses		75,075 38	
Total expenditure and investment during 1867			$209,906 3
Balance on hand January, 1868			11,485 5

Statement in detail of expenditures for current operations of the year 1867.

BUILDING.

Reconstruction of parts injured by fire	$35,102 35	
Repairs to old parts	2,137 91	
Furniture and fixtures	1,410 48	
		$38,650 7

GENERAL EXPENSES.

Meetings of the Board	256 50
Lighting	204 55
Heating	808 65
Postage	714 45
Stationery	$892 79
General printing	194 06
Incidentals, viz: hardware, tools, materials for cleaning, &c	241 19

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Payment for loss of tools by the fire, authorized by resolution of the Board, February 1, 1867	$500 00	
Salaries secretary, clerks, and laborers	8,676 65	
		$12,488 84

PUBLICATIONS AND RESEARCHES.

Smithsonian contributions, (quarto)	$4,621 76	
Smithsonian miscellaneous collections, (octavo)	2,045 20	
Smithsonian report, illustrations, stereotyping, &c	920 18	
Meteorology	1,044 39	
Apparatus	457 82	
Laboratory	17 41	
Explorations	923 49	
		10,030 25

LIBRARY, MUSEUM, AND LITERARY EXCHANGES.

Purchase of books and binding	$719 10	
Literary and scientific exchanges	3,507 87	
Assistants in museum	5,890 39	
Incidentals for museum, alcohol, benzine, &c	1,715 81	
Freights	2,072 38	
		13,905 55
Total expenditure in 1867		75,075 38

The Board of Regents having directed the sale of the United States 7.30 bonds, as also the Indiana, Georgia, and Washington bonds, the proceeds to be applied to the increase of the permanent capital, this was accordingly done through the agency of the bankers of the Institution. The act of Congress of February 8, 1867, passed in accordance with the memorial of the Board of Regents, (see report for 1866, page 74,) authorized the Institution to deposit with the Secretary of the Treasury, on the same terms as the original bequest, the residuary legacy of Smithson, together with other sums not exceeding, with the original, $1,000,000. From part of the proceeds of the sale of the United States and State stocks referred to, the sum of $108,620 37, with the residuary legacy, $26,210 63, making $134,831, was deposited in the treasury of the United States; thus making the total amount of the Smithson fund perpetually in the United States treasury, bearing 6 per cent. interest, payable semi-annually, $650,000.

The Commissioner of Agriculture continues to pay one-half of the salary of the clerk employed to take charge of the meteorological statistics.

The appropriation annually made by Congress "for the care and preservation of the collections of the exploring and surveying expeditions of the government" has been expended, as heretofore, under the direction of the Secretary of the Interior, and as the amount was increased for the year ending July 1, 1868, from $4,000 to $10,000, a part of this has been applied to the preservation of that part of the building devoted to the collections, and other purposes.

The State of Virginia has paid four per cent. interest on its stock, reserving two per cent. in Richmond, to be paid whenever the conflicting claims between the old State and the new State of West Virginia should be settled. All the interest due on the stock of the State up to the 1st of January, 1867, amounting to $19,260, has been funded by the issue of new bonds bearing six per cent. interest, none of which has, however, yet been paid. The total amount of Vir-

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ginia stock now held by the Institution is $72,760, which it is considered advisable to retain for the present.

The current income of the Institution is now deposited in the First National Bank of Washington, the payment of bills being by checks drawn by the Secretary, in accordance with the regulations prescribed by the Board at its last annual session.

The following may be considered an approximate estimate for the year 1868.

ESTIMATED RECEIPTS.

Interest on the Smithson fund in the treasury of the United States, viz: six per cent. on $650,000, payable July 1, 1868, and January 1, 1869	$39,000 00
Probable premium on coin, say at 33 per cent	13,000 00
Interest on Virginia bonds, viz.: 4 per cent. on $53,500	2,140 00
Balance on hand January 17, 1868	11,485 56
	65,625 56

APPROPRIATIONS.

For current operations of the Institution	$34,000 00
For building, (including outstanding debts,)	20,000 00
Estimated balance January 1, 1869	11,625 56
	65,625 56

In conclusion, the committee have the satisfaction of again calling attention to the fact that all the expenditures from the organization of the establishment to the present time, including $450,000 on the building, the publication and distribution of 200,000 quarto and octavo volumes; the collection of a library of 60,000 works; a museum containing 1,000,000 specimens; and the distribution to other institutions of 250,000 specimens, have been made exclusively from the income and its investments, and that the bequest has been increased by an addition this year of $108,620 37, making the total capital invested in United States and other securities $722,760.

Attention is called to the expense of the National Museum, consisting of the collections of various government exploring expeditions. In addition to the appropriation by Congress for this object, from the income of the Institution the sum of $7,606 20 has been expended during 1867.

The committee have examined 680 vouchers, embracing several thousand items, for payments during the year for legitimate purposes of the Institution, and find them correct and conformed to the rules adopted by the Regents on the 22d of February, 1867.

RICHARD DELAFIELD.
RICHARD WALLACH.
PETER PARKER.

WASHINGTON, *April* 14, 1868.

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REPORT OF THE EXECUTIVE COMMITTEE.

WASHINGTON, *January* 14, 1869.

The Executive Committee of the Smithsonian Institution respectfully submits the following statements in relation to its invested capital, the receipts and expenditures during the year 1868, and an estimate of receipts and proposed appropriations for 1869:

CAPITAL INVESTED.

The Smithson fund in the Treasury of the United States on the 1st of January, 1869, remains as stated in the last annual report		$650,000 00
And in Virginia State 6 per cent. bonds	$53,500	
With coupon bonds issued for unpaid interest to January, 1867	19,260	
	72,760	
The value of which at the present time may be estimated at *55* per cent. on the par value		40,018 00
Total invested capital		690,018 00

RECEIPTS IN 1868.

Interest from the Treasurer of the United States on $650,000 at 6 per cent. for the year ending 31st December	$39,000 00
Premium on sale of gold	14,527 50
Interest on Virginia 6s, old bonds, 2 per cent. on $53,500 for the first six months of 1868, less brokerage	1,067 33
From sales of publications	385 52
From sales of old and useless material	188 88
Repayment of expenses of explorations from parties co-operating with the Institution	698 54
Repayment for freights incurred on account of parties sending books to foreign libraries	100 00
Cash balance in bank, January, 1868	11,485 56
Amount available for 1868	67,453 33

In addition to this amount the Institution received from, and accounted for, to the Department of the Interior, the sum of $5,116 31, appropriated by Congress for the preservation and care of the property in the museum collected by government exploring expeditions. Of this sum $4,000 was the appropriation for the year 1868–'69, and $1,116 31 the balance of the previous year's appropriation.

The State of Virginia paid during the year 2 per cent. on its old bonded debt for the first six months, leaving 1 per cent. still due for that period, claimed to be payable by Western Virginia, as a just proportion of the original State debt. On its new bonds, issued for coupon interest past due, nothing has been paid. The State proposes to sell its interest in certain canals, rail and other roads, to liquidate this and other indebtedness, and favorable results may for the future be anticipated from this investment.

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Statement in detail of expenditures during the year 1868

BUILDING.

For the reconstruction of parts of the building destroyed by fire, completed in 1867 and paid in 1868	$18,457 20	
Repairs of other parts of the building	2,746 49	
Furniture and fixtures to meet the general wants of the Institution	2,982 38	
Amount expended on the building		$24,186

GENERAL EXPENSES.

For meetings of the Board of Regents	$303 37	
Lighting the building, offices, &c	276 35	
Warming the building, offices, &c	1,086 50	
Postage	456 89	
Stationery	345 92	
Printing labels, blanks, circulars, &c	189 81	
Tools, materials for cleaning, binding records, &c., &c.	614 70	
Salaries of secretary, chief clerk, and assistants, laborers, and contingent labor	9,552 80	
Interest on temporary over-draft	72 00	
		12,898

PUBLICATIONS, RESEARCHES, &C.

Publishing transactions, researches, &c., for Smithsonian Contributions, quarto	$4,633 09	
Miscellaneous collections, octavo	1,177 45	
Smithsonian reports, illustrations, stereotyping, &c., octavo	1,050 75	
Meteorology, computations, &c	1,011 47	
Apparatus	99 70	
Explorations, natural history, and archæology	1,682 57	
		9,655

LIBRARY, MUSEUM, AND EXCHANGES.

For purchase of books and binding	$775 42	
Literary and scientific exchanges	2,801 84	
Assistants in museum, janitor, watchmen, laborers, and for labelling and arranging shells and ethnological specimens	3,226 72	
Incidentals for museum—alcohol, bottles, &c	1,488 29	
Freight on books, specimens, and other property received and sent away	2,068 88	
		10,361
Expenditures during the year		57,100
Deducting this amount from the receipts of the year and cash in bank on 1st January, 1868, as previously stated	$67,453 33	
Leaves a balance in bank January, 1869, of		$10,352

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EXAMINATION OF ACCOUNTS.

The committee has examined 576 receipted vouchers for payments made during the four quarters of the year 1868. Evidence of the receipt of materials and property, and of services rendered, and payment to the claimants or legal representatives, was found for the whole amount expended during the year. An examination of the quarterly accounts current, bank-book, check-book, and ledger showed that the payments were made as required by the regulations prescribed by the regents; and the cash balances stated in the accounts current were in the authorized depository after the payment of all the quarterly accounts charged in the abstracts of expenditures.

In the receipts for the year 1868, the sum of $5,116 31 is noted as having been received through the Department of the Interior, appropriated by Congress for the preservation and charge of its property in the museum collected by government exploring expeditions. The expenditure of this sum was made and accounted for in strict conformity with the financial regulations prescribed by the regents.

ESTIMATED RECEIPTS FOR 1869.

Interest on the Smithsonian fund in the treasury of the United States $650,000, payable 1st July, 1869, and 1st January, 1870, at 6 per cent. in gold	$39,000 00
Probable premium on sale of coin	13,000 00
Interest on Virginia 6 per cent. stock	1,067 00
Sales of useless property and other incidental sources during the year	500 00
Total income in 1869	53,567 00

APPROPRIATIONS FOR 1869.

It is proposed to apply the income of the year as follows:

For general expenses	$15,000 00	
Publications and researches	15,000 00	
Library, collections for museum, and exchanges	10,000 00	
Continuing the repairs of the building	5,000 00	
	45,000 00	
Leaving from the yearly income a balance of	8,567 00	
		$53,567 00

It will thus be seen that the Institution has paid all its indebtedness; provided all needful accommodation in the gradual reconstruction of parts of its building destroyed by fire; published large editions of annual contributions to science; accumulated a saving from its income of 1868 of $10,352 74, and an estimated saving of $8,567 from its income of 1869—making the sum of $18,919 74 as an available fund in January, 1870, to enable the Institution to conduct its operations on a cash basis from the beginning of the year, and to continue and extend its investigations in the various branches of physical science; at the same time supplying apparatus for warming the various apartments in the building.

RICHARD DELAFIELD,
PETER PARKER,
Executive Committee.

WASHINGTON, *January*, 14, 1869.

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REPORT OF THE EXECUTIVE COMMITTEE.

WASHINGTON, D. C., *February* 1, 1870.

The Executive Committee of the Smithsonian Institution respectfully submits the following statement of the financial condition of Smithson's trust fund, and the application of the income for the year ending 31st December, 1869, with estimates of receipts and proposed appropriations for 1870:

The bequest of Smithson in the United States treasury is..		$541,379 63
The Regents have added to this investment from savings, &c		108,620 37
Making the Smithson fund in the U. S. Treasury, as a perpetual loan, at 6 per cent., on the 1st January, 1870		650,000 00
And in Virginia State 6 per cent. registered stock.	$53,500	
With unpaid interest to January, 1867	19,260	
	$72,760	
The value of which, at the present time, may be estimated at 58 per cent		42,200 80
Total invested capital		692,200 80
And a cash balance in bank of		20,969 65
Thus making Smithson's Trust Fund, on the 1st January, 1870		713,170 45

RECEIPTS IN 1869.

Interest from the Treasurer of the United States, on $650,000, at 6 per cent., for the year ending 31st December, 1869	$39,000 00
Premium on sale of gold, at 34¾ and 19¾ per cent. premium.	10,515 20
Sales of publications	235 58
Sales of old and useless material	232 07
Repayment of expenses of explorations and collections...	732 15
Repayment for freights on literary and scientific exchanges.	517 56
Total income for the year 1869	51,232 56
Cash balance in bank, January, 1869	10,352 74
Amount available in 1869	$61,585 30

In addition to this sum, the Institution received from and accounted for to the Department of the Interior the sum of $4,000, appropriated by Congress for the preservation and care of the property in the museum, collected by Government exploring expeditions.

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Statement in detail of expenditures during the year 1869.

BUILDING.

For reconstruction of parts of building destroyed by fire	$1,764 70	
For general repairs of the building	2,345 25	
For furniture and fixtures, cases, carpets, stoves, &c	2,520 95	
		$6,630 90

GENERAL EXPENSES.

For meetings of the Board of Regents	$122 00	
For lighting the building	239 13	
For warming the building	1,389 77	
For postage	289 50	
For stationery	437 18	
For printing blanks, circulars, receipts, &c	322 25	
For tools, materials for cleaning and incidentals	328 89	
For salaries of secretary, chief clerk, and assistants	7,814 92	
		10,943 64

PUBLICATIONS AND RESEARCHES.

For publishing Smithsonian contributions, 4to	$1,987 18	
For publishing miscellaneous collections, 8vo	3,037 50	
For publishing Smithsonian reports, 8vo	1,458 55	
For meteorology, salaries of clerks and computers, rain gauges, and thermometers	1,581 10	
For apparatus for researches	146 80	
For explorations, natural history, and archæology in Mexico, Florida, Alaska, New Mexico, Hudson's Bay, Alabama, and Nova Scotia	611 54	
		8,822 07

LIBRARY, MUSEUM, AND EXCHANGES.

For purchase of books, periodicals, and binding	$436 04	
For literary and scientific exchanges, agencies at Leipsic, London, Paris, and Amsterdam	4,860 94	
For assistants in museum, janitor, watchmen, laborers, &c	5,307 50	
For incidentals to museum, freight, alcohol, taxidermy, &c	3,513 96	
For gallery of art: Portrait in oil of the late Dr. Robert Hare, who gave his collection of chemical and philosophical apparatus to the Institution	100 00	
		14,218 44
Expenditures during the year 1869		40,615 65
Deducting this amount from the receipts of the year and cash in bank in January, 1869, viz: receipts	$61,585 30	
Leaves a balance in bank, January, 1870		$20,969 65

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ESTIMATES AND APPROPRIATIONS FOR 1870.

Receipts.

Interest on the Smithson Fund in the treasury of the United States, $650,000, payable 1st July, 1870, and 1st January, 1871, at 6 per cent. gold	$39,000 00
Probable premium on sale of coin, at 18 per cent	7,020 00
Interest on Virginia 6 per cent. stock, 1869, 2 per cent	1,454 00
Interest on Virginia 6 per cent. stock, 1870, 2 per cent	1,454 00
Sales of useless property, &c	500 00
Income for the year 1870	49,428 00

APPROPRIATIONS FOR THE YEAR 1870.

For general expenses	$12,000 00	
For publications and researches	15,000 00	
For museum and collections, not including the apropriation by Congress for care and preservation of the Wilkes and other exploring expeditions	6,000 00	
For literary and scientific exchanges	5,000 00	
For building and contingencies	5,000 00	
		43,000 00

EXAMINATION OF ACCOUNTS.

The committee examined 497 receipted vouchers for payments made during the four quarters of the year 1869. In every case the approval of the secretary of the Institution is given on the face of each voucher, and the certificate of an authorized agent of the Institution is appended to each voucher, setting forth that the materials and property and services rendered were for the Institution and applied to the purposes stated in the account.

The quarterly accounts-current, bank book, check book, and ledger were also examined, and showed that the payments were made in conformity with the regulations prescribed by the Regents, and that the cash balance stated in the accounts current for each quarter was in deposit to the credit of the Institution in the authorized depository, after all the quarterly accounts charged in the abstracts were paid.

In conclusion, the committee finds that all the expenses of the Institution have been paid in full to the end of the year, leaving a cash balance in bank on the 1st January, 1870, of $20,969 65.

All of which is respectfully submitted, by—

RICHARD DELAFIELD,
PETER PARKER,
JOHN MACLEAN,
Executive Committee.

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REPORT OF THE EXECUTIVE COMMITTEE.

The Executive Committee of the Board of Regents respectfully submit the following statement as their report in relation to the funds of the Institution, the receipts and expenditures for the year 1870, and the estimates for the year 1871.

Statement of the fund at the beginning of the year 1871.

The amount originally received as the bequest of James Smithson, of England, deposited in the Treasury of the United States, in accordance with act of Congress of August 10, 1846	$515,169	00
The residuary legacy of Smithson received in 1865, deposited in the Treasury of the United States, in accordance with the act of Congress of February 8, 1867	26,210	63
Total bequest of Smithson	541,379	63
Amount deposited in the Treasury of the United States, as authorized by act of Congress of February 8, 1867, derived from savings of income and increase in value of investments	108,620	37
Total permanent Smithson fund in the Treasury of the United States, bearing interest at 6 per cent., payable semi-annually in gold	650,000	00
In addition to the above there remains of the extra fund derived from savings, &c., in Virginia State registered 6 per cent. bonds, at par value, $72,760, now valued at.	48,000	00
Total investments	698,000	00
Balance on hand January, 1871, of uninvested funds	21,477	81
Total of the Smithson fund, January, 1871	719,477	81

Receipts for 1870.

Interest for 1870 on $650,000, at 6 per cent. in gold	$39,000	00
Premium on $39,000 gold, at 11¾ and 10⅝ per cent.	4,363	12
Cash from a friend of science, in aid of publications	1,200	00
Sale of publications	360	52
Sale of useless materials	64	87
Repayment of expenses of explorations	68	40
Repayment of freight and postage	432	47
Total receipts for the year	45,489	38

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Expenditures for 1870.

Building and furniture	$4,843 13	
General expenses	14,840 65	
Publications and researches	15,873 22	
Museum and exchanges	9,424 22	
Total expenditures for the year		44,981 22
Balance		508 16
Besides this balance of $508 16, there was a balance of $20,969 65 in bank, at the beginning of 1870, which makes the total uninvested and available balance mentioned in the general statement of		$21,477 81

In addition to the receipts mentioned above, the Institution received from and accounted to the Interior Department for $5,024, being part of the $10,000 appropriated by Congress for the preservation and care during the year ending June 30, 1871, of the specimens collected by various exploring expeditions. This sum is not included in the account of expenditures.

Statement in detail of expenditures—1870.

BUILDING.

For reconstruction of parts of building	$860 12	
For general repairs of building	3,852 81	
For furniture and fixtures, cases, carpets, stoves, &c	130 20	
		$4,843 13

GENERAL EXPENSES.

For meetings of the Board of Regents	$178 25	
For lighting the building	355 42	
For warming the building	1,566 22	
For postage	770 98	
For stationery	829 19	
For printing blanks, circulars, receipts, &c	389 13	
For tools, materials for cleaning and incidentals	478 16	
For salaries of Secretary, clerks, and assistants	10,273 30	
		14,840 65

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PUBLICATIONS AND RESEARCHES.

For publishing Smithsonian contributions, 4to.	$6,986 57	
For publishing miscellaneous collections, 8vo..	3,065 37	
For publishing Smithsonian reports, 8vo.....	283 45	
For meteorology, salaries of clerk and computers, and for thermometers and rain-gauges..	3,119 00	
For apparatus for researches.....	249 70	
For explorations, natural history, and archæology	1,414 13	
Lectures	755 00	
		$15,873 22

MUSEUM AND EXCHANGES.

For literary and scientific exchanges, through agencies at Leipsic, London, Paris, Amsterdam, &c.....	$4,165 62	
For museum, salary of assistant secretary and assistants in museum, and for incidentals in addition to the appropriation from Congress.	5,008 84	
For purchase of books, periodicals, &c.....	249,76	
		9,424 22
Expenditures during 1870		44,981 22

Estimated receipts for 1871.

From interest on Smithson fund, in Treasury of the United States	$39,000 00
Probable premium on gold, 10 per cent. on the above $39,000	3,900 00
Sale of books, &c	1,000 00
Total	43,900 00

Estimated appropriations for 1871.

For general expenses.....	$10,000 00
For publications, researches, &c.....	20,000 00
For exchanges.....	5,000 00
For purchase of books and apparatus	2,400 00
For museum, (additional to congressional appropriation) ..	1,500 00
For steam heating-apparatus fund.....	5,000 00
Total	43,900 00

Besides the above estimated receipts, there is in bank, as before stated in the general account, the sum of $21,477 81.

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The committee have examined six hundred and twenty-one receipted vouchers for payments made during the four quarters of the year 1870. In every case the approval of the Secretary of the Institution is given on each voucher, and the certificate of an authorized agent of the Institution is appended, setting forth that the materials and property and services rendered were for the Institution, and to be applied to the purposes stated in the account.

The quarterly accounts-current, bank-book, check-book and ledger were also examined and found to be correct, showing a cash balance in bank on January 1, 1871, of $21,477 81.

All of which is respectfully submitted.

PETER PARKER,
JOHN MACLEAN,
Executive Committee.

JANUARY 26, 1871.

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REPORT OF THE EXECUTIVE COMMITTEE.

The Executive Committee of the Board of Regents respectfully submit the following report in relation to the funds of the Institution, the receipts and expenditures for the year 1871, and the estimates for the year 1872:

Statement of the fund at the beginning of the year 1872.

The amount originally received as the bequest of James Smithson, of England, deposited in the Treasury of the United States, in accordance with the act of Congress of August 10, 1846		$515,169 00
The residuary legacy of Smithson, received in 1865, deposited in the Treasury of the United States, in accordance with the act of Congress of February 8, 1867		26,210 63
Total bequest of Smithson		541,379 63
Amount deposited in the Treasury of the United States, as authorized by act of Congress of February 8, 1867, derived from savings of income and increase in value of investments		108,620 37
Total permanent Smithson fund in the Treasury of the United States, bearing interest at 6 per cent., payable semi-annually in gold		$650,000 00
In addition to the above, there remains of the extra fund derived from savings, &c., in Virginia bonds, at par value $88,125.20, now valued at		35,500 00
The cash balance in First National Bank, January, 1872	$16,315 02	
Amount of congressional appropriation for the fiscal year ending June 30, 1872, $10,000, one-half of which available January, 1872	5,000 00	
		21,315 02
Total of Smithson funds January, 1872		$706,815 02

The interest due on the Virginia bonds, instead of being paid, has been funded by the State, and has thus increased the amount of the bonds from $72,760, as stated in the last report, to $88,125.18, as given in the foregoing statement. The market value of this stock, which was

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given last year at $48,000, has fallen, during 1871, to $35,500, on account of the uncertain policy of the State.

The balance at the beginning of the year 1872, viz, $21,315.02, is very nearly the same as that at the beginning of the year 1871, which was $21,477.81. This balance is not invested as a part of the permanent fund, because it is required in order to pay cash for bills as they become due, and previous to receiving the semi-annual income.

Statement of receipts from the Smithson fund for 1871.

Interest on $650,000, at 6 per cent. in gold	$39,000 00
Premium on gold, June and December, 12⅝ and 8⅞	4,192 50
Total receipts	43,192 50

Statement of expenditures from the Smithson fund for 1871.

BUILDING.

Reconstruction of parts destroyed by fire, and repairs	$8,827 12	
Furniture and fixtures	205 29	
		$9,032 41

GENERAL EXPENSES.

Meetings of the board	$127 12	
Lighting the building	267 15	
Heating the building	79 69	
Postage	448 76	
Stationery	452 55	
Incidentals	354 75	
Salaries and clerk hire	9,572 62	
		11,302 64

PUBLICATIONS AND RESEARCHES.

Smithsonian Contributions, quarto	$9,753 68	
Miscellaneous collections, octavo	608 12	
Reports, octavo	739 48	
Meteorology, computations, rain-gauges, &c	2,000 55	
Apparatus for researches	744 03	
Explorations, natural history, and archæology	1,301 07	
Lectures	285 00	
		15,431 93

MUSEUM, LIBRARY, AND EXCHANGES.

Museum, in addition to the sum drawn from the appropriation by Congress, ($4,976)	$8,132 95	

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Literary and scientific exchanges through agencies in London, Paris, Leipsic, Amsterdam, Milan, &c	$4,201 50	
Purchase of books and periodicals	253 86	
		$12,588 31
Total expenditures, (repayments having been deducted)		$48,355 29

From the above statement, it appears that the expenditures were $5,162.79 in excess of the receipts; but to meet this deficiency, $5,000 of the congressional appropriation for the museum, as was stated before, is still in the Treasury of the United States. Had this sum been drawn during the year, it would have been deducted from the $8,132.95 charged to the museum.

During the past year the Institution has advanced money for the payment of freight on specimens and articles directed to its care, and for fitting out the expedition toward the north pole. It has also sold publications, old and useless material, and meteorological instruments, the payments for which have been deducted from the several items of the previous accounts of expenditures, as follows:

From the museum, for repayments for freight	$592 92
From exchanges, for repayments on expense of literary and scientific exchanges	945 17
From explorations, for repayments on account of Hall's expedition toward the north pole, &c	522 27
From Smithsonian contributions and miscellaneous collections, for sales of publications	525 70
Building and incidentals general, repayments for old material, postage refunded, &c	622 59
Apparatus—sale of meteorological apparatus	40 00
Total repayments and miscellaneous credits	3,248 65

Appropriations and expenditures from Congress on account of the museum and care of the Government collections.

In addition to the receipts from the Smithson fund, the following amounts have been received:

From appropriation by Congress for fitting up halls for collections	$20,000 00
From appropriation by Congress for annual care of collections, being part of the $10,000 appropriated for the fiscal year ending June 30, 1871, ($5,024 having been drawn in the year 1870)	4,976 00
	24,976 00

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The appropriation of $20,000 was expended, under the direction of the Secretary of the Interior, and accounted for to that Department, in ceiling, flooring, plastering, and painting the large hall in the upper story of the main building, repairing the roof, fire-proofing the west wing, and fitting up the basement of the same for the preparation of specimens and storage.

The appropriation of $4,976 was expended for salaries, taxidermy, labor, &c., in preserving the Government collections, and was accounted for to the Interior Department.

The estimates for the year 1872 are as follows:

RECEIPTS.

From interest on the permanent fund	$39,000 00
Probable premium on gold, 10 per cent	3,900 00
	42,900 00

APPROPRIATIONS.

For building	$5,000 00
For general expenses	10,000 00
For publications and researches	20,000 00
For exchanges	5,000 00
For books and apparatus	900 00
For museum, additional to Congress appropriation	2,000 00
	42,900 00

The Executive Committee have examined seven hundred and fifty-seven receipted vouchers for payments made during the four quarters of the year 1871, both from the Smithson fund and the appropriations from Congress. In every voucher the approval of the Secretary of the Institution is given, and the certificate of an authorized agent of the Institution is appended, setting forth that the materials and property and services rendered were for the Institution, and to be applied to the purposes stated.

The quarterly accounts-current, bank-book, check-book, and ledger have also been examined and found correct, showing a balance in bank December 31, 1871, of $16,315.02.

Respectfully submitted.

PETER PARKER,
JOHN MACLEAN,
*Executive Committee.**

MARCH 13, 1872.

* Major General W. T. Sherman, member of committee, absent, in Europe.

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REPORT OF THE EXECUTIVE COMMITTEE.

The Executive Committee of the Board of Regents respectfully submit the following report in relation to the funds of the Institution, the receipts and expenditures for the year 1872, and the estimates for the year 1873:

STATEMENT OF THE FUND AT THE BEGINNING OF THE YEAR 1873.

Amount originally received as the bequest of James Smithson, of England, deposited in the Treasury of the United States, in accordance with the act of Congress of August 10, 1846	$515,169	00
Residuary legacy of Smithson, received in 1865, deposited in the Treasury of the United States, in accordance with the act of Congress of February 8, 1867	26,210	63
Total bequest of Smithson	541,379	63
Amount deposited in the Treasury of the United States as authorized by act of Congress of February 8, 1867, derived from savings of income and increase in value of investments	108,620	37
Total permanent Smithson fund in the Treasury of the United States, bearing interest at 6 per cent., payable semi-annually in gold	650,000	00
In addition to the above there remains of the extra fund from savings, &c., in Virginia bonds, at par value, $88,125.20, now valued at	37,000	00
Cash balance in First National Bank, 1st January, 1873	17,811	36
Total Smithson funds 1st January, 1873	704,811	36

The Virginia stock has risen in value during the past year, and as the prospect is that the legislature of the State will make provision for the regular payment of the interest, the probability is that this stock will continue to rise.

During the past year, the Institution has received from its agents, Messrs. Riggs & Co., on account of back interest on Virginia bonds, after deducting expenses, $3,004.90, in regard to which a detailed account is given in a communication of the Secretary to the Board at its meeting of January 16th.

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The balance at the beginning of the year, $17,811.36, as given in the foregoing statement as a part of the Smithson fund, has not been invested because it is required to pay bills as they become due, previous to receiving the semi-annual income at the end of June, 1873, or, in other words, to support the Institution during the accumulation of the first half year's semi-annual interest.

STATEMENT OF RECEIPTS FROM THE SMITHSON FUND FOR 1872.

Interest on $650,000, at 6 per cent. in gold	$39,000 00
Premium on gold June and December, (13⅜ and 11⅛)	4,911 55
Interest on Virginia stock, less commissions	3,004 90
Total receipts	46,916 45
Total expenditures from the Smithson income during 1872, as shown by the detailed statement given below	45,420 11
Balance unexpended	1,496 34

The above balance is added to the uninvested savings from previous years, viz, $16,315.02, making the $17,811.36 found in the preceding general statement of the condition of the funds.

EXPENDITURES FROM THE SMITHSON FUND FOR 1872.

Building.

Reconstruction and repairs	$6,672 35	
Furniture and fixtures	1,625 87	
		$8,298 22

General expenses.

Meetings of the board	$155 50	
Lighting the building, exclusive of Museum	217 67	
Heating the building, exclusive of Museum	754 00	
Postage, exclusive of Museum	320 73	
Stationery, exclusive of Museum	541 62	
Incidentals, exclusive of Museum	525 62	
Salaries, clerk-hire, and labor	11,153 83	
		13,668 97

Publications and researches.

Smithsonian Contributions, quarto	$6,394 17	
Miscellaneous Collections, octavo	1,661 99	
Annual reports, octavo	527 50	
Meteorology	2,550 00	
Apparatus	645 00	
Laboratory	169 87	
Lectures	600 00	
		12,548 53

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Exchanges.

Literary and scientific exchanges through agencies in London, Paris, Leipsic, Amsterdam, Stockholm, &c...	$5,870 32

Museum.

Salaries, preservation of collections, &c., paid from the Smithsonian income in addition to the sums drawn from the appropriations by Congress.....	5,034 07
Total expenditure from the Smithson fund in 1872, as given above	45,420 11

During the past year the Institution has advanced money for the payment of freight on specimens, the purchase of apparatus for Government expeditions, &c., the repayments of which, together with the amount received for sales of publications and old material, have been deducted from the several items of the foregoing expenditures, as follows:

From museum, for repayments for freight.....	$610 03
From exchanges, for repayments for freight.....	462 81
From apparatus, for instruments for expeditions.....	1,306 23
From lectures, for advance for scientific course.....	382 20
From Smithsonian Contributions and Miscellaneous Collections, for copies sold.....	307 36
From building and incidentals, for sale of old material.....	44 68
Total repayments and miscellaneous credits in 1872..	3,113 31

The estimates for the year 1873 are as follows:

ESTIMATES.

Receipts.

From interest on the permanent fund, in gold, to be received June 30, 1873.....	$19,500 00
To be received December 31, 1873	19,500 00
Probable premium on gold at 10 per cent.....	3,900 00
From interest on Virginia stock.....	1,700 00
Total receipts.....	44,600 00

Appropriations.

For building.....	$3,000 00
For general expenses.....	13,000 00
For publications and researches.....	20,000 00
For exchanges	7,000 00
For contingencies	1,600 00
	44,600 00

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NATIONAL MUSEUM.

Until the year 1870, the support of the National Museum had principally devolved on the Smithsonian Institution, only $4,000 having been annually appropriated by Congress for this purpose. Since that date, however, Congress has indicated the intention of providing for the full support of the Museum, as is evident from the following extracts from the annual appropriation acts:

Smithsonian Institution: For preservation of the collections of the surveying and exploring expeditions of the Government, ten thousand dollars..... $10,000

41st Cong., Sess. II, Chap. 292, Stat. at Large 1869–'71, p. 295. Act (July 15, 1870) making appropriations for sundry civil expenses, &c., for the fiscal year ending June 30, 1871.

Smithsonian Institution: For preservation of the collections of the surveying and exploring expeditions of the Government, ten thousand dollars..... 10,000

41st Cong., Sess. III, Ch. 114, Stat. at Large 1869–'71, p. 500. Act (March 3, 1871) making appropriations for sundry civil expenses of the Government, &c., for the fiscal year ending June 30, 1872.

Smithsonian Institution: For preservation of the collections of the surveying and exploring expeditions of the Government, fifteen thousand dollars..... 15,000

42d Cong., Sess. II, Ch. 415 Stat. at Large 1871–'72, p. 361. Act (June 10, 1872) making appropriations for sundry civil expenses, &c., for the fiscal year ending June 30, 1873.

It should be noted in regard to the above appropriations that the fiscal year of Government is not the same as that of the Institution, the former ending on the 30th of June, and the latter on the 31st of December. From this fact it follows that although the last appropriation of Congress is $15,000 for the care of the Museum, yet the amount available from this appropriation, in 1872, was only $7,500, or the first half of the appropriation for the fiscal year ending 30th June, 1873.

Besides this, however, there was drawn the whole appropriation for the fiscal year ending 30th of June, 1872, viz, $10,000, the first half of which should have been drawn the previous year, and thus have diminished the expenditure from the Smithson income for the Museum in 1871.

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The following is therefore a statement of the receipts and expenditures for the care of the National Museum in 1872:

Appropriation by Congress for the first half of the fiscal year ending 30th June, 1872, viz, July to December, 1871.	$5,000 00
Appropriation by Congress for the first half of the fiscal year ending 30th June, 1872, viz, January to June, 1872.....	5,000 00
Total for fiscal year ending 30th June, 1872.....	10,000 00
Appropriation by Congress for the first half of the fiscal year ending 30th June, 1873, viz, July to December, 1872.....	7,500 00
Total from congressional appropriation.....	17,500 00
Also from Smithson income for 1872, as shown in the preceding statement.....	5,034 07
Making a total for the care of the Museum.....	22,534 07

This large expenditure was necessary for the preservation of a number of perishable specimens, the mounting of the large casts of fossils presented by Professor Henry A. Ward, of Rochester, N. Y., the preparation of numerous skeletons, the transfer of the Mineralogical and Geological Museum of the Government from the General Land-Office to the Smithsonian building, and the preliminary examination of the specimens of which it consisted.

The cost of the reconstruction of the building after the fire of 1865, exclusive of furniture, was $136,000, the whole of which was paid from the funds of the Institution for restoring the main building, and not for fitting up the rooms wanted for the further extension of the Museum. For the latter purpose Congress has made provisions in the following acts:

Smithsonian Institution: Toward the completion of the hall required for the Government collections, ten thousand dollars.....	$10,000 00

41st Cong., Sess. II, Ch. 292, Stat. at Large 1869–'71, p. 295. Act (July 15, 1870) making appropriations for sundry civil expenses, &c., for the fiscal year ending June 30, 1871.

Smithsonian Institution: For the completion of the hall required for the Government collections, ten thousand dollars.....	10,000 00

41st Cong., Sess. III, Chap. 114, Stat. at Large 1869–71, p. 501. Act (May 3, 1871) making appropriations for sundry civil expenses of the Government for the fiscal year ending June 30, 1872.

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Smithsonian Institution: To commence the proper fitting up, in a fire-proof manner, of the vacant apartments in the Smithsonian Institution building, for the proper distribution and exhibition of the Government collections of natural history, geology, and mineralogy, five thousand dollars..... $5,000 00

42d Cong., Sess. II, Ch. 172, Stat. at Large 1871–'2, p. 131. Act (May 18, 1872) making appropriations to supply deficiencies in the appropriations for the service of the Government for the fiscal year ending June 30, 1872, and for former years.

Smithsonian Institution: For the completion of the hall required for the Government collections, ten thousand dollars..... 10,000 00

42d Cong., Sess. II, Chap. 415, Stat. at Large, p. 361. Act (June 10, 1872) making appropriations for sundry civil expenses of the Government for the fiscal year ending June 30, 1873.

Of these appropriations, $20,000 were expended in 1871 on account of ceiling, flooring, plastering, and finishing halls for the extension of the Museum; and in 1872, $2,962.50 for cases for the geological hall, leaving available for the first half of 1873, for finishing these cases, and for commencing those for the large hall in the second story of the main building, $12,037.50.

The foregoing expenditures for fitting up rooms for the Museum, $2,962.50, as well as those for the care and preservation of the collections, $17,500, have been accounted for to the Secretary of the Interior, as in previous years.

The Executive Committee have examined thirteen hundred and ninety-five receipted vouchers for payments made during the four quarters of the year 1872, both from the Smithson fund and the appropriations from Congress. In every voucher the approval of the Secretary of the Institution is given, and the certificate of an authorized agent of the Institution is appended, setting forth that the materials and property and services rendered were for the Institution, and to be applied to the purposes stated.

The quarterly accounts-current, bank-book, check-book, and ledger have also been examined and found correct, showing a balance in the First National Bank, 1st of January, 1873, of $17,811.36.

Respectfully submitted.

PETER PARKER,
JOHN MACLEAN,
W. T. SHERMAN,
Executive Committee.

JANUARY 20, 1873.

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REPORT OF THE EXECUTIVE COMMITTEE.

The Executive Committee of the Board of Regents respectfully submit the following report in relation to the funds of the Institution, the receipts and expenditures for the year 1873, and the estimates for the year 1874:

Statement of the fund at the beginning of the year 1874.

The amount originally received as the bequest of James Smithson, of England, deposited in the Treasury of the United States, in accordance with the act of Congress of 10th August, 1846	$515,169 00	
The residuary legacy of Smithson, received in 1865, deposited in the Treasury of the United States, in accordance with the act of Congress of 8th February, 1867	26,210 63	
Total bequest of Smithson		541,379 63
Amount deposited in the Treasury of the United States, as authorized by act of Congress of 8th February, 1867, derived from savings of income and increase in value of investments		108,620 37
Total permanent Smithson fund in the Treasury of the United States, bearing interest at 6 per cent., payable semi-annually in gold		650,000 00
In addition to the above there remains of the extra fund from savings, &c., in Virginia bonds and certificates, viz, consolidated bonds, $58,700; deferred certificates, $29,375.07; fractional certificate, $50.13, now valued at.		33,000 00
Cash balance in United States Treasury at the beginning of the year 1874, as a special deposit, for current expenses		12,226 68
Amount due from the First National Bank, (present value unknown)	$5,757 41	
Total Smithson funds, January, 1874		695,226 68

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The Virginia bonds originally puchased by the Institution were as follows:

Five bonds of $10,000 each, (Nos. 146 to 150;) one bond of $5,000, (No. 201,); three bonds of $1,000 each, (Nos. 3497 to 3499;) one bond of $500, (No. 658;) two bonds of $100 each; making in all $58,700.

On the 9th December, 1871, the above bonds were exchanged for Virginia coupon-bonds, consolidated debt, (see Report, 1871, page 105,) as follows:

Fifty-eight bonds, at $1,000 each, (Nos. 11521 to 11578).....	$58,000
One bond, at $500, (No. 1380).....	500
Two bonds, at $100 each, (Nos. 4192 and 4191).....	200
	58,700

These bonds are in the cashier's vault of the United States Treasury, in charge of General Spinner. Coupons due July 1, 1873, and January 1, 1874, are still attached to these bonds.

In addition to the above bonds the institution holds a certificate of indebtedness, (No. 4,543,) deposited with Riggs & Co., from the State of Virginia, (dated July 1, 1871,) for one-third of the amount due for principal and interest surrendered under the provisions of an act of the legislature of 30th March, 1871, this amount having been reserved until an adjustment is made between the States of Virginia and West Virginia as to the old debt of Virginia, amounting to $29,375.07.

There is also a certificate of indebtedness (No. 2,969) for $50.13 for an odd amount of interest.

The uninvested balance in the First National Bank at the beginning of 1873 was $17,811.36. This balance would this year have been increased by a saving of $172.73 had it not been for the suspension of the First National Bank in September last, in which $5,757.41 still remain unpaid, and will probably be, to a considerable extent, a loss.

In accordance with the law of Congress, the interest on the Smithson fund is payable semi-annually, on the 1st of July and 1st January, and from the beginning of the operations of the institution this semi-annual interest was deposited with Messrs. Riggs & Co., until at the meeting of the Board of Regents on the 22d February, 1867, a resolution was adopted directing the deposit of the income in "a national bank which was an authorized Government depository." In accordance with this direction of the Board, the money was deposited in the First National Bank, which proved, however, to be an unsafe curator of the funds. The whole amount on deposit at the time of the suspension of the bank, 19th September, 1873, was $8,224.87, on which, however, a dividend of 30 per cent., or $2,467.46 was paid on the 11th November last, leaving, as stated above, $5,757.41 still due.

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Statement of receipts and expenditures in 1873.

RECEIPTS.

From interest on $650,000, at 6 per cent. in gold	$39,000 00	
From premium on gold, June and December, (15⅛ and 11½%)	5,191 87	
From interest on Virginia stock, (sale of coupons due January 1, 1873*)	1,091 83	
Total receipts		$45,283 70

EXPENDITURES.

Total expenditures from the Smithson income during 1873, as shown by the detailed statement below		45,110 97
Balance unexpended, which is included in the cash balance in the Treasury		172 73

Statement of expenditures in detail from the Smithson fund for 1873.

BUILDING.

Repairs of the building	$3,252 23	
Furniture and fixtures	386 26	
		$3,638 49

GENERAL EXPENSES.

Meetings of the board	$300 75	
Lighting the building	322 65	
Heating the building	554 38	
Postage	971 10	
Stationery	394 91	
Incidentals	757 47	
Salaries and clerk hire	12,429 96	
Purchase of books and periodicals	411 34	
		16,142 56

PUBLICATIONS AND RESEARCHES.

Smithsonian contributions, quarto	$8,706 08	
Miscellaneous collections, octavo	4,514 46	
Reports, octavo	593 55	

*Interest on $58,700 coupons at 3 per cent.		$1,761 00	
Deduction of one-third for West Virginia	$587 00		
Deduction for State tax	73 37		
Deduction for charge of Riggs & Co.'s commission	8 80		
		669 17	
Net amount received			$1,091 83

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Meteorology and researches	$3,232 81	
Apparatus	815 09	
Laboratory	109 88	
Explorations	228 00	
Lectures	600 00	
		$18,799 87

EXCHANGES.

Literary and scientific exchanges through agencies in London, Paris, Leipsic, Amsterdam, Milan, &c	6,251 74

MUSEUM.

Incidentals in addition to Government appropriation	278 31
Total expenditure from Smithson fund in 1873	45,110 97

During the past year the Institution has advanced money for the payment on account of the Government for freights on specimens, purchase of apparatus for Government expeditions, &c., the repayments of which, together with the amount received for sales of publications, &c., have been deducted from the several items of the foregoing expenditures, as follows:

From museum, for repayments for freight	$967 46
From museum, for repayments for labor, &c	510 00
From exchanges, for repayments for freight	196 95
From apparatus, for instruments for expeditions	394 67
From postage, for repayments	37 45
From building, for repayments	1,258 37
From heating, for repayments	325 21
From cost of books, for repayments	33 00
From Smithsonian contributions, from sales	99 07
From Smithsonian miscellaneous collections, from sales	119 95
From Smithsonian reports, from sales	16 00
From incidentals, from sales old material	35 35
Total repayments and miscellaneous credits in 1873	3,993 48

NATIONAL MUSEUM.

For several years past Congress has made an annual appropriation of $15,000 for the support of the National Museum, under the care of the Smithsonian Institution, and it has also in the last two years appropriated $25,000 for the completion and fitting up of the halls required for the Government collections, and $12,000 for the introduction of

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steam-heating apparatus. The following is a tabular statement of the condition of these funds at the present time:

Appropriation for preservation of collections for fiscal year ending June 30, 1874. (Statutes at Large, vol. 17, p. 518)	$15,000 00	
Amount expended to 31st December, 1873. (See Museum journal A, p. 55)	7,500 00	
Balance for support of museum to June 30, 1874		$7,500 00
Appropriation for completion of the hall required for the Government collections. (Statutes at Large, vol. 17, p. 361.)	10,000 00	
(The whole of this has been expended. See Museum journal A, p. 509.)		
Appropriation for fitting up the new halls required for the Government collections. (Statutes at Large, vol. 17, p. 518)	$15,000 00	
Amount expended to 2d January, 1874. (See Museum journal A, p. 519)	9,449 08	
Balance unexpended, but due on contracts		5,550 92
Appropriation for steam-heating apparatus. (Statutes at Large, vol. 17, p. 518)	12,000 00	
Amount expended to 31st December, 1873. (See Museum journal A, p. 533)	8,537 97	
Balance unexpended, but due on contracts		3,462 03
Balances, January, 1874		9,012 95

Previous to 1873 all the disbursements on account of the appropriations of Congress for the support of the National Museum were made directly by the Institution and afterward refunded by the Department of the Interior; but during the past year as strict a division of the accounts as possible has been made, and those relating to the museum have been paid directly by the disbursing agent of the Department of the Interior.

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THE FOLLOWING ARE THE ESTIMATES FOR THE YEAR 1874:

RECEIPTS.

Interest on the permanent fund, receivable 30th June, 1874, in gold	$19,500	
Interest on the permanent fund, receivable 31st December, 1874, in gold	19,500	
Probable premium on gold, 10 per cent	3,900	
Interest on Virginia bonds	2,000	
		$44,900

APPROPRIATIONS.

For building	2,000	
For general expenses	14,000	
For publications and researches	20,000	
For exchanges	7,000	
For books and apparatus	500	
For contingencies	1,400	
		44,900

The executive committee have examined eight hundred and eighty-five receipted vouchers for payments made during the four quarters of the year 1873. In every voucher the approval of the Secretary of the Institution is given, and the certificate of an authorized agent of the Institution is appended, setting forth that the materials and property and services rendered were for the Institution, and to be applied to the purposes specified.

The quarterly accounts-current, bank-book, check-book, and ledger have also been examined and found correct, showing a balance in the care of the Treasurer of the United States, 13th January, 1874, of $12,226.68.

Respectfully submitted.

PETER PARKER,
JOHN MACLEAN,
W. T. SHERMAN,
Executive Committee.

JANUARY 24, 1874.

REPORT ON THE APPROPRIATIONS AND DISBURSEMENTS FOR THE NATIONAL MUSEUM.

Since the foregoing report was presented to the Board of Regents and accepted by them, as authorized by a resolution of the board, January 26, 1874, the undersigned, members of the executive committee, have exam-

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ined the accounts of appropriations and disbursements for the National Museum for the year 1873, and find for each disbursement a voucher approved by the Secretary of the Smithsonian Institution, and a certificate of an authorized agent of the Institution appended, setting forth that the account is correct, the articles or services charged therein were required, and furnished on account of the objects specified, and that the same were necessary, and the charges reasonable.

The undersigned have also examined the journal and ledger of the National Museum, and find the balances remaining, on the 1st of January, 1874, of the appropriations of Congress for Smithsonian building and for preservation of collections in the National Museum to correspond with the certificate of the 2d February, 1874, of the disbursing clerk of the Interior Department, viz: Smithsonian building, 1874, $9,012.95, (see page 518, journal A;) preservation of collections, 1874, $7,500, (see page 55, journal A;) total balance, $16,512.95.

The other member of the committee (Dr. Maclean) was obliged to leave the city previous to this examination.

Respectfully submitted.

PETER PARKER,
W. T. SHERMAN,
Executive Committee.

WASHINGTON, *February* 5, 1874.

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REPORT OF THE EXECUTIVE COMMITTEE.

The executive committee of the Board of Regents respectfully submit the following report in relation to the funds of the Institution, the receipts and expenditures for the year 1874, and the estimates for the year 1875:

Statement of the fund at the beginning of the year 1875.

The amount originally received as the bequest of James Smithson, of England, deposited in the Treasury of the United States, in accordance with the act of Congress of August 10, 1846	$515,169 00
The residuary legacy of Smithson, received in 1865, deposited in the Treasury of the United States, in accordance with the act of Congress of February 8, 1867	26,210 63
Total bequest of Smithson	541,379 63
Amount deposited in the Treasury of the United States, as authorized by act of Congress of February 8, 1867, derived from savings of income and increase in value of investments	108,620 37
Amount received as the bequest of James Hamilton, of Carlisle, Pa	1,000 00
Total permanent Smithson fund in the Treasury of the United States, bearing interest at 6 per cent., payable semi-annually in gold	651,000 00
In addition to the above there remains of the extra fund from savings, &c., in Virginia bonds and certificates, viz: Consolidated bonds, $58,700; deferred certificates, $29,375.07; fractional certificate, $50.13: total, $88,125.20; now valued at	35,000 00
Cash balance in the United States Treasury at the beginning of the year 1875, for current expenses	15,909 99
Amount due from First National Bank, Washington, $4,112.43, (present value unknown)	
Total Smithson funds 15th January, 1875	$701,909 99

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The coupons on the Virginia bonds held by the Institution were sold on the 19th May, 1874, by Riggs & Co., with the following result:

$1,200 Virginia coupons, at 77⅛	$925 50
$2,322 Virginia coupons, at 77	1,787 94
	2,713 44
Less charges	17 61
	$2,695 83

This amount was deposited with the Treasurer of the United States on account of the current expenses of the Institution for the year.

The value of the Virginia bonds held by the Institution has increased during the year about $2,000.

Coupons due July 1, 1874, and January 1, 1875, are still uncollected, and will form part of the income for the year 1875.

It was stated in the last report that at the time of the suspension of the First National Bank of Washington, (19th September, 1873,) where the current funds of the Smithsonian had been deposited, there were $8,224.87 to the credit of the Institution; and that on the 11th of November, 1873, a dividend of 30 per cent., or $2,467.46, had been received, leaving a balance of $5,757.41 due. A second dividend on this deposit was made on the 7th of April, of 1874, of $1,644.97, still leaving $4,112.43 due the Institution, which it is hoped will be received at least in part during the coming year.

Statement of the receipts and expenditures in 1874

RECEIPTS.

Interest on $650,000 from the United States, 6 per cent., gold	$39,000 00
Interest on $1,000 from the Hamilton bequest, from 24th February, 1874, to 31st December, 1874	50 88
Premium on gold 30th June, 1874, 110 1/16; and 31st December, 1874, 112¼, (less commission)	4,308 35
Interest on Virginia stock, coupons sold, (9th May, 1874).	2,695 83
Twenty per cent. dividend from First National Bank, (7th April, 1874)	1,644 97
Total receipts	47,700 03

EXPENDITURE.

Total expenditure from the Smithson income in 1874	44,016 72
Balance unexpended of the annual income which is included in the cash balance in the Treasury, ($15,909.99)	3,683 31

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Statement of expenditure in detail from the Smithson income, 1874.

Building.		
Repairs of the building	$3,507 66	
Furniture and fixtures	717 73	
		$4,225
General expenses.		
Meetings of the board	312 87	
Lighting the building	523 15	
Heating the building	305 47	
Postage	81 07	
Stationery	492 64	
Incidentals	817 17	
Salaries and clerk hire	12,730 00	
Purchase of books	457 43	
		15,719
Publications and researches.		
Smithsonian Contributions	7,022 98	
Miscellaneous collections	7,363 67	
Reports	664 92	
Other publications	93 40	
Meteorology and researches	881 97	
Apparatus	1,142 60	
Laboratory	9 10	
Lectures	600 00	
		17,778
Exchanges.		
Literary and scientific exchanges, &c		5,589
Museum.		
Incidentals in addition to Government appropriation		703
		$44,016

As usual, the Institution has during the past year made temporary advances for the payment of freight on Government collections, purchase of instruments for exploring parties, &c., the repayments of which, together with the amount received from sales of publications, have been deducted from the several items of the foregoing expenditures, as follows:

Repayments.	
From exchanges, repayments for freight, &c	$1,205
From postage, repayments	45
From researches, repayments	95
From Smithsonian Contributions, sales	115
From miscellaneous collections, sales	157
From salaries, repayment of advance	40
From incidentals, sales of old material	7
	$1,666

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The following are the estimates of receipts and appropriations of the Smithson fund for the year 1875:

Estimated receipts.

Interest on the permanent fund, receivable 30th June, 1875, in gold	$19,500	
Interest on the permanent fund, receivable 31st December, 1875, in gold	19,500	
Interest on the Hamilton fund	60	
Probable premium on gold, 10 per cent	3,906	
Interest on Virginia bonds	2,000	
		$44,966

Provisional appropriations.

For building	$2,000	
For general expenses	14,000	
For publications and researches	20,000	
For exchanges	7,000	
For books and apparatus	1,000	
For contingencies	966	
		$44,966

NATIONAL MUSEUM.

The annual appropriation of Congress for the preservation of the Government collections intrusted to the care of the Institution has been continued during the past year, and an additional sum of $10,000 has been granted for the fitting up and completing the cases in the new halls required for these collections.

The latter appropriation has been expended in the construction of walnut table-cases with glass tops and sides, for the exhibition of the smaller ethnological specimens in the upper hall, and for large cases for mammals and fishes in the lower hall. The latter cases have also been so constructed as to serve as bases or platforms for restorations of the megatherium, hadrosaurus, glyptodon, &c., thus utilizing a large space, and forming a very striking and imposing feature of the collections.

The following is a tabular statement of the condition of the Museum funds:

For preservation of the Government collections.

Balance unexpended of appropriation for the fiscal year ending June 30, 1874. (Statutes at Large, vol. 17, p. 518) See Report for 1873, page 145	$7,500 00	
Amount expended to December 31, 1874. (See Museum Journal A, p. 73.)	7,500 00	
Balance		Nothing.

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Appropriation for fiscal year ending June 30, 1875. (Statutes, 1874, p. 216)	$20,000 00	
Expenditure from July 1, 1874, to January 11, 1875. (See Museum Journal A, p. 106)	12,011 38	
Balance unexpended		$7,988 62

For fitting up halls for Government collections.

Balance unexpended of appropriation for fiscal year ending June 30, 1874. (Museum Journal A, p. 519)	$5,550 92	
Expenditure on this account in 1874. (Museum Journal A, p. 527)	5,550 92	
Balance		Nothing.

For steam-heating apparatus for Museum.

Balance unexpended of appropriation for fiscal year ending June 30, 1874. (Museum Journal A, p. 533)	3,462 03	
Expenditure on this account in 1874. (Museum Journal A, p. 527)	3,462 03	
Balance		Nothing.

For fitting up and completing cases for collections.

Appropriation for fiscal year ending June 30, 1875. (Statutes, 1874, p. 216)	10,000 00	
Expended on this account in 1874. (Museum Journal A, p. 106)	10,000 00	
Balance		Nothing.

From the above statement it appears that of the congressional appropriations for the National Museum, the only amount unexpended and now available for the collections is $7,982.62. The *estimates* submitted by the Institution to Congress for the fiscal year ending 30th June, 1876, were as follows:

For the preservation of the collections	$25,000 00	
For fitting up and completing the cases	10,000 00	
Total amount required		$35,000 00

We have no reason to doubt that this sum, or the greater part of it, will be appropriated by Congress during the present session.

All the payments on account of the National Museum have been made

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during the past year, directly by the disbursing officer of the Department of the Interior, on the presentation of vouchers approved by the Secretary of the Smithsonian Institution.

The executive committee have examined five hundred and seventeen receipted vouchers for payments made from the Smithson income during the year 1874, and four hundred and seventy similar vouchers for payments made from the congressional appropriations for the National Museum, making a total number of vouchers of nine hundred and eighty-seven.

All of the vouchers have the approval of the Secretary of the Institution, and a certificate setting forth that the materials and property and services rendered were for the Institution, and to be applied to the purposes specified.

As authorized by a resolution of the board 26th May, 1874, the committee have also examined the account-books of the National Museum and find the balance of $7,988.62 to the credit of the appropriation for the "preservation of the collections" remaining on the 11th January, 1875, to correspond with the certificate of the disbursing clerk of the Department of the Interior.

The quarterly accounts current, bank-book, check-book, and ledger, have also been examined and found to be correct, showing a balance in the care of the Treasurer of the United States 15th January, 1875, of $15,909.99.

Respectfully submitted.

PETER PARKER,
GEO. BANCROFT,
Executive Committee.

WASHINGTON, *January* 23, 1875.

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REPORT OF THE EXECUTIVE COMMITTEE.

The executive committee of the Board of Regents respectfully submit the following report in relation to the funds of the Institution, the appropriations by Congress for the support of the National Museum, the receipts and expenditures for both of these departments for the year 1875, and the estimates for the year 1876:

FINANCES.

Statement of the condition of the funds at the beginning of the year 1876.

The amount originally received as the bequest of James Smithson, of England, deposited in the Treasury of the United States in accordance with the act of Congress of August 10, 1846	$515,169 00
The residuary legacy of Smithson, received in 1865, deposited in the Treasury of the United States, in accordance with the act of Congress of February 8, 1867	26,210 63
Total bequest of Smithson	541,379 63
Amount deposited in the Treasury of the United States, as authorized by act of Congress of February 8, 1867, derived from savings of income and increase in value of investments	108,620 37
Amount received as the bequest of James Hamilton, of Carlisle, Pa., February 24, 1874	1,000 00
Total permanent Smithson fund in the Treasury of the United States, bearing interest at 6 per cent., payable semi-annually in gold	651,000 00
In addition to the above there remains of the extra fund from savings, &c., in Virginia bonds and certificates, viz: consolidated bonds, $58,700; deferred certificates, $29,375.07; fractional certificate, $50.13; total, $88,125.20, now valued at	42,000 00
Cash balance in the United States Treasury at the beginning of the year 1876, for current expenses	20,555 82
Amount due from First National Bank, $2,056.22, (value unknown)	
Total Smithson funds 20th January, 1876	713,555 82

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Statement of the receipts and expenditures during 1875:

RECEIPTS

Interest on $650,000 from the United States, 6 per cent., gold		$39,000 00
Premium on above June 30, 1875, at 116 1/16, $3,107.81; and January 1, 1876, at 112 3/16, $2,474.07, (less commission)		5,581 88
Interest on Virginia bonds, coupons sold June 14 and December 31, 1875		4,750 11
Dividend from First National Bank, 10 per cent., May 5, 1875, $822.48; and 15 per cent., December 27, 1875, $1,233.73		2,056 21
Amount		51,388 20

EXPENDITURES.

Total expenditure from the Smithson income in 1875		46,809 98
Balance unexpended of the annual income, which is included in the cash balance in the Treasury, ($20,555.82)		4,578 22

HAMILTON BEQUEST.

By the will of the late James Hamilton, of Carlisle, Pa., the sum of one thousand dollars was left to the Institution, the interest of which was to be expended biennially for the advance of knowledge. This bequest was received on the 24th of February, 1874, from the executors of Mr. Hamilton, and to secure its safe investment the money was immediately deposited by Professor Henry in the Treasury of the United States, (see Smithsonian Report for 1873, page 159,) on the same terms as the original bequest of Smithson, in accordance with the act of Congress of February 8, 1867, which authorizes the increase of the permanent fund to a sum not exceeding one million dollars.

The following is a statement of the interest received on the Hamilton bequest, which will be appropriated in accordance with the terms of the will:

Interest on $1,000 from February 24, 1874, to December 31, 1874			$50 88
Interest from January 1, 1875, to December 31, 1875, 6 per cent. in coin	$60 00		
Premium at 112 3/16, less commission	7 61		
		67 61	
			118 49

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VIRGINIA BONDS.

Previous to the year 1867, the savings from the income of the Institution were invested in State stocks, as shown in the following table:

	Amount.	Rate.	Cost Jan., 1857.	Sold Feb., 1867.	Gain.	Loss.
Indiana 5 per cent. bonds	$75,000 00	84	$63,000 00	$68,906 25	$5,906 25	.....
Tennessee 6 per cent. bonds	15,000 00	94	11,167 50	9,586 78	.....	$1,580 72
Georgia 6 per cent. bonds	500 00	100	500 00	358 71	.....	141 29
Washington 6 per cent. bonds	100 00	100	100 00	100 00	.....	.....
	90,600 00	.....	74,767 50	78,951 74	5,906 25	1,722 01
Net gain	.....	.....	.....	.....	4,184 24	.....
Virginia 6 per cent.	53,500 00	93	49,839 00	.....	.....	.....

In accordance with the authority given in the act of Congress of February 8, 1867, to increase the Smithson fund in the United States Treasury, the regents disposed of all the State stocks held by the Institution as shown above, with the exception of the Virginia bonds, which were at the time so low that it was thought advisable to retain them, with the expectation that they would enhance in value, which expectation has been realized. The following table, however, shows that the value of these bonds has fluctuated:

1867	$31,565	1872	35,500
1868	30,000	1873	37,000
1869	40,018	1874	33,000
1870	42,200	1875	35,000
1871	48,000	1876	42,000

Under the provisions of an act of the legislature of Virginia, of 30th March, 1871, the accumulated interest on these bonds was funded by the State; that is, the interest was added to the principal, and for two-thirds of the increase new bonds were issued, and certificates of indebtedness were given for the remaining one-third.

These funds are, therefore, of two classes, one known as "consolidated bonds," due from the State of Virginia, and the other as "deferred certificates," the payment of which is reserved until an adjustment is made between the States of Virginia and West Virginia as to the settlement of the State debt prior to their separation.

The income which the Institution has received from this source is entirely from the sale of the coupons of the consolidated bonds.

The bonds and certificates now belonging to the Institution are as follows:

Consolidated bonds.

58 bonds, Nos. 11521 to 11578 inclusive, for $1,000 each	$58,000 00
1 bond, No. 1380, for $500	500 00
2 bonds, Nos. 4191 and 4192, for $100 each	200 00
	58,700 00

(These bonds are deposited in the Treasury of the United States.)

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Deferred certificates.

No. 4543, dated July 1, 1871		$29,375 07
No. 2969		50 13
(These certificates are in charge of Messrs. Riggs & Co.)		
Total par value of Virginia securities		88,125 20

The State of Virginia has made only partial provision to pay the interest on its debt, but, as the coupons of the consolidated bonds are receivable for taxes, they have a commercial value, and were sold, by direction of the Institution, during the year by Messrs. Riggs & Co., as follows:

Coupons on $58,700, due July 1, 1874, and January 1, 1875; sold June 14, 1875:

$3,000, at 89½	$2,685 00	
510, at 89¾	457 73	
	3,142 73	
Less ½ per cent. commission	17 55	
	3,125 18	
12, at 89½, less commission	10 68	
		$3,135 86
3,522		

Coupons on $58,700, due July 1, 1875; sold 31st December, 1875:

$1,761, at 84½	$1,488 04	
Less ½ per cent. commission	8 80	
		1,479 24

In addition to the above, the Institution had in its possession coupons for one-third the interest due on the 1st of January and 1st of July, 1872, amounting to $1,174, the remaining two-thirds ($2,348) having been collected by Riggs & Co. and sold for the Institution, according to their statement of November 9, 1872. (See Smithsonian Report for 1872, page 81.) This amount, $1,174, above referred to, was sold by Riggs & Co. on the 14th June, 1875, with the following result:

$1,174, at 12	$140 88	
Less commission	5 87	
		135 01
Total amount realized from sale of Virginia coupons in 1875		4,750 11

There still remain unsold the coupons on the $58,700 bonds due 1st January, 1876.

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FIRST NATIONAL BANK DEPOSIT.

At the time of the suspension of the First National Bank, of Washington, (19th September, 1873,) in which the current funds had been deposited by direction of the board, there were $8,224.87 to the credit of the Institution. The following dividends have been received on this deposit:

1. 11 Nov., 1873, 30 per cent		$2,467 46
2. 7 April, 1874, 20 per cent		1,644 97
3. 5 May, 1875, 10 per cent		822 48
4. 27 Dec., 1875, 15 per cent		1,233 73
75		6,168 64
Leaving a balance still due of		2,056 23
		8,224 87

STATEMENT OF EXPENDITURES IN DETAIL FROM THE SMITHSON INCOME, 1875.

Building.

Repairs and improvements	$1,802 94	
Furniture and fixtures	412 17	
		$2,215 11

General expenses.

Meetings of the board	$227 25	
Lighting the building	792 25	
Heating the building	953 30	
Postage	366 25	
Stationery	413 56	
Incidentals, ice, brushes, insurance, soap, telegrams, &c	836 08	
Salaries and clerk-hire	13,161 50	
Purchase of books and periodicals	203 37	
		16,953 56

Publications, researches, &c.

Smithsonian Contributions	12,518 31	
Miscellaneous collections	288 45	
Annual report, (illustrations and translations)	1,453 26	
Meteorology and researches	1,432 72	
Apparatus	235 60	
Laboratory	41 72	
Lectures	400 00	
		16,370 06

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Exchanges.

Literary and scientific international exchanges		6,748 80

Museum.

Expenditures in addition to the Government appropriation	1,908 45	
Advanced for construction of laboratory of natural history	2,614 00	
		4,522 45
Total expenditure from the Smithsonian income in 1875		46,809 98

The Institution, as in former years, has made temporary advances for the payment of freight on Government collections, &c., the repayments of which, together with the amount received from sales of the publications of the Institution, have been deducted from the several items of the foregoing expenditure, as follows:

Repayments.

From exchanges, repayments for freight, &c	$1,097 01
From postage, repayments	31 23
From researches, repayments	98 37
From Smithsonian Contributions, sales	181 09
From miscellaneous collections, sales	648 43
From reports, sales	7 50
From incidentals, sales of old material	16 12
From cost of books, repayment	7 75
From museum, repayment of advances	2,676 05
	4,763 55

Estimates.

The following are the estimates of receipts and appropriations of the Smithson fund for the year 1876:

Estimated receipts.

Interest on the permanent fund, receivable 30th June, 1876, in gold	$19,500	
Interest on the permanent fund, receivable 31st December, 1876, in gold	19,500	
Interest on the Hamilton fund	60	
Probable premium on gold, 10 per cent	3,906	
Interest on Virginia bonds	2,500	
		$45,466

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Provisional appropriations.

For building	$2,000	
For general expenses	14,000	
For publications and researches	20,000	
For exchanges	7,000	
For books and apparatus	1,000	
For contingencies	1,466	
		$45,466

NATIONAL MUSEUM.

The National Museum still continues to be in charge of the Smithsonian Institution, Congress making an appropriation annually of $20,000 for the care and preservation of the collections.

The number of specimens is, however, every year increasing from the public surveys and explorations, and the sum appropriated by Congress has never been sufficient to meet the demand for their proper care and exhibition. During the past year it has been found necessary to erect an additional building for the use of the Museum taxidermists and photographer, toward the expense of which $2,614 have been advanced from the Smithson income. In addition to this, $1,908.45 were also required to meet the current expenses of the Museum, making a total of $4,522.45 expended during the present year from the Smithson income beyond the appropriation by Congress for the Museum.

The appropriation made by Congress for fitting up the halls has been expended in the construction of additional walnut table-cases with glass tops and sides, for the exhibition of ethnological specimens.

At the session of the Board of Regents, January 23, 1875, a resolution was adopted to request Congress to make an appropriation of $2,500 to increase the heating capacity of the apparatus used to warm the rooms occupied by the Government collections.

The subject was presented to the appropriate committees of Congress and the desired appropriation was granted without dissent. After estimates had been procured, a contract was made with the firm of Baker, Smith & Co., of New York, to substitute larger boilers and pipes for those then in use, and the work has been satisfactorily accomplished for the amount of the appropriation.

The following is a tabular statement of the condition of the Museum funds:

Balance unexpended of appropriation for preservation of the Government collections, for the fiscal year ending 30th June, 1875. (Statutes for 1874, p. 216)	$7,988 63
Expenditure from January 1, 1875, to July 1, 1875. (Museum Journal A, p. 130)	7,988 63

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Appropriation for the fiscal year ending 30th June, 1876. (Digest of Appropriations, 1876, p. 105.)		
For preservation of collections	$20,000 00	
For fitting up new halls	10,000 00	
For completing heating apparatus	2,500 00	
		$32,500 00
Expenditure from July 1, 1875, to December 31, 1875. (Museum Journal A, p. 163)		22,881 32
Balance unexpended		$9,618 68

Required for the six months ending 30th June, 1876.

The estimates submitted by the Institution to Congress for appropriations for the fiscal year ending 30th June, 1877, were as follows:

For preservation of the collections of the surveying and exploring expeditions of the Government	$25,000 00
For fitting up apartments for mounting and photographing specimens	5,000 00
	30,000 00

This sum is $5,000 less than the amount asked for the previous year.

All the payments on account of the National Museum have been made, during the past year, directly by the disbursing-officer of the Department of the Interior on the presentation of vouchers approved by the Secretary of the Smithsonian Institution.

SUMMARY.

The Executive Committee have examined five hundred and ninety-eight vouchers for payments made from the Smithson income during the year 1875, and three hundred and forty-six similar vouchers for payments made from the Congressional appropriations for the National Museum, making a total number of nine hundred and forty-four vouchers.

All of the vouchers have the approval of the Secretary of the Institution, and a certificate setting forth that the materials and property and services rendered were for the Institution, and to be applied to the purposes specified.

As authorized by a resolution of the Board of Regents, 26th May, 1874, the committee have also examined the account-books of the National Museum and find the balance of $9,618.68 to the credit of the appropriation for the "preservation of the collections" remaining on the 1st of January, 1876, to correspond with the certificate of the disbursing-clerk of the Department of the Interior.

The quarterly accounts current, bank-book, check-book, and ledger have also been examined and found to be correct, showing a balance in

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the charge of the Treasurer of the United States 19th January, 1876, of $20,555.82.

Respectfully submitted.

PETER PARKER,
JOHN MACLEAN,
GEO. BANCROFT,
Executive Committee.

WASHINGTON, *January* 24, 1876.

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JOURNAL AND REPORTS

OF THE

BUILDING COMMITTEE

OF THE

SMITHSONIAN INSTITUTION,

FROM 1847 TO 1868.

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REPORTS OF THE BUILDING COMMITTEE.

Report of the Building Committee for the year 1847.

he committee submit to the Board, as a complete record of their proceedings from date of their appointment, on the 5th of February last, to the 1st of December ent, a copy of their journal.

y reference to that journal, the Board will perceive that the committee, in discharge of their duty, were led into a somewhat extended field of inquiry, especially egards building material; and that they have been enabled to collect, and have y recorded, a large amount of detailed information on this subject essential to r own guidance, but, also, they believe, important to the public generally, and cially to the Government, if Congress should decide to erect any other public ldings in this city. They caused to be examined the various marble, and granite, freestone quarries within a moderate distance of Washington, having been forate enough to engage the services of a gentleman of practical experience as a logist, and who tendered these services gratuitously, his necessary traveling and er expenses only being paid.

he examination embraced the chief marble and granite quarries of Maryland; freestone quarries of Aquia creek, Virginia, whence the material has been drawn the construction of the Capitol, President's house, Treasury building, and other blic structures in this city; and the freestone quarries of the Upper Potomac, efly in the vicinity of Seneca creek, on the banks of the Chesapeake and Ohio nal, and about twenty-three miles from the city.

he results of this examination, as contained in reports made by the geologist, and ich will be found spread at large on our journal, were briefly these:

1st. That the marble quarries of Maryland, chiefly in the vicinity of the village of arksville, about thirteen miles from Baltimore, on the line of the Susquehanna lroad, contain two qualities of marble: one fine-grained and of beautiful uniform lor, approaching the character of statuary marble; the other, of inferior quality, nilar to the Sing Sing marble employed in New York, in Grace church, and other blic structures, of a somewhat coarse and highly crystalline structure, and known the quarrymen here under the name of "alum limestone." The former was conently recommended as a building material equal in durability to any in the world; e latter was pronounced inferior, both in beauty and durability, yet capable of furshing a very lasting material if the selection was made with care. Being less tough an the finer-grained variety, it was thought less suitable for ornaments having bold ojections, and somewhat liable to chip off where there was much undercutting.

2d. That the granite quarries of Maryland, in the vicinity of Woodstock, on the ne of the Baltimore and Ohio Railroad, and about sixteen miles beyond the Relay ouse, furnish a granite equal to that of Quincy, and not excelled for beauty of ppearance, compactness of structure, and uniformity of color, texture, and compotion, by any granite in the United States; splitting, also, with remarkable facility, that on a block twelve or fourteen feet in length the face of cleavage may not vary ore than a single inch from a true level; in short, a building material of unsurassed durability and uniformity, and to which, as to the finer-grained marble in the larksville quarries, no possible objection, except on the score of expense, could be ound, unless, indeed, it be considered one, that in this material the effect of light nd shade from projecting surfaces is in a measure lost, while in marble and good inted freestone every shadow is sharply marked.

3d. That the Aquia creek freestone, heretofore used in public buildings in Washington, is a material not to be trusted to, being pervaded by dark specks of the proxide and peroxide of iron, which, in peroxidating, acquire a yellowish or reddish olor, and having occasional clay holes, such as disfigure the Treasury and the Patent Office. A portion of this freestone was, indeed, considered durable and free from material blemish; but the chance of actually procuring it free from disfiguring spots nd stains was considered so uncertain, that it was recommended to refrain from using it in the Institution building.

4th. That the freestone of the upper Potomac, in the vicinity of Seneca creek, and

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found in quarries close to the line of the Chesapeake and Ohio canal, is the best and most durable of all the Potomac freestones.

The lilac-gray variety found in the Bull Run quarry, twenty-three miles from Washington, was especially recommended, and pronounced to be equal, if not superior, to that supplied for Trinity church, New York, from the quarries of New Jersey.

In regard to this latter material, it was stated that it possessed a quality that should especially recommend it to the attention of builders. When first quarried it is comparatively soft, working freely before the chisel and hammer; but by exposure it gradually indurates, and ultimately acquires a toughness and consistency that not only enables it to resist atmospheric vicissitudes, but even the most severe mechanical wear and tear. Thus, on the tow-path of the aqueduct, near Seneca creek, over which horses and mules have been travelling almost daily for upwards of twenty years, this freestone was found still unimpaired. Even the corners around which the heavy lock-gates swing, showed no signs of chipping or decay; and on the perpendicular wall of the aqueduct, where the water is continually oozing through the joints and trickling down its face, forming an incrustation of carbonate of lime, this freestone was observed, where the calcareous crust had scaled off, with the grooves and ridges of the surface still nearly as distinct as when the blocks first came from the hands of the stone-mason, more than twenty years ago.

The rare and valuable quality possessed by this freestone, of hardening by exposure to the weather, and which may be due to iron in its composition, passing from a lower to a higher degree of oxidation, is occasionally found in building stone on the continent of Europe; as, for example, in a calcareous freestone which has been excavated for centuries from St. Peter's mountain, near Maestrich, in Belgium. It is highly prized wherever found, as this peculiarity permits the freestone to be wrought at considerably less expense than either granite or marble, and imparts to it a durability increasing with age.

Further to test the durability of these various building materials under exposure to the vicissitudes of the seasons, specimens of each, and also of other building stones from New York and elsewhere, were handed to a gentleman, of this city, experienced in chemistry, and, having a laboratory at command, he was requested to subject these to a process recommended by Brard, a French chemist, and described in the "Annales de Chimie et Physique;" according to which, the crystallization of the sulphate of soda is substituted for the freezing of water; and thus, by artificial means, the action of the elements on these materials—the alternate freezing and thawing to which the external component of a building is in this climate annually subjected—is in a measure imitated. The result—which, however, in consequence of the short time which could be allowed for the process, must be considered an approximation only to the truth—is given in a report from the gentleman in question. The specimens were reduced to inch cubes; and it was found, after four weeks, that a cube of granite had lost about *one-third of a grain;* a cube of the fine grained marble, about *one-fifth of a grain;* a cube of the best quality of the "alum-stone," or coarser-grained marble, *half a grain to a grain and a half;* and a cube of freestone from the Patent Office, which, however, was judged not to be a fair average specimen of the Aquia creek freestones, lost *eighteen grains and a half.* Freestone from Trinity church lost from *two-thirds of a grain* to about *a grain and a half.* The brown Connecticut stone, freely used in New York, lost from *fourteen* to nearly *twenty-five grains.* Coarse-grained New York marble, from Mount Pleasant, lost *nearly a grain;* Nova Scotia coarse-grained sandstone, about *two grains;* while Pennsylvania blue limestone lost little over *a quarter of a grain.*

As to the relative cost of the Maryland granite, Maryland marble, fine-grained and coarse-grained, Aquia creek freestone, and Seneca creek freestone, it was found, from the report of the geologist and from actual offers made to the committee by owners of quarries, and which will be found recorded in the journal of the committee, to be, per cubic foot of dimension stone delivered in Washington, as follows:

1st. For coarse-grained marble with large crystals, commonly called "alum stone," from *fifty to sixty cents*, according to quality.

2d. For fine-grained marble the lowest offer was *seventy* cents.

3d. For granite, *forty-six* cents.

4th. For Aquia creek freestone, *forty* cents. The materal used in the public buildings in Washington, in blocks of ordinary size, has cost from *forty* to *fifty* cents.

5th. For Seneca freestone, the lilac-gray variety, from Bull Run quarry, *twenty* cents. A contract has been made by a gentleman of Washington, not connected

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h the Institution, to have stone from the Seneca creek quarries delivered to him
he city at that price.

last Chester marble was offered at *seventy-five* cents.
he committee ought here to state, that the proposals by owners of granite and
rble quarries in Maryland, to deliver material for our building, were at a consid-
bly lower rate than they otherwise would have been, in consequence of the liber-
y evinced by the directors of the Baltimore and Ohio Railroad, and of the Balti-
re and Susquehanna Railroad, towards the Institution. The chairman of the
mittee had an interview with Mr. McLane and Mr. Howard, the presidents of
se railroads, and the directors of both companies passed resolutions, that if we
ided to use Maryland marble or granite, they would transport it at the rate of
and a half cents per ton, per mile, instead of *four* cents, the usual charge for the
nsportation of similar materials. As it happened, the committee had no occasion
vail themselves of this liberal proposal; but it doubtless materially influenced
amount of the bids subsequently put in for the erection of the building in mar-
and granite.
uch is a brief summary of the measures adopted by the committee, and of the
rmation collected by them, and which will be found in detail on their journal, on
important subject of building material. While engaged in collecting that infor-
tion, they caused to be inserted in the city journals, advertisements, inviting from
tractors proposals for the erection of the Institution building; the external walls
e of upper Potomac freestone, or of marble or of granite, or of blue gneiss; and
arate proposals were requested in each of these materials. Meanwhile the archi-
t and superintendent attended in the office of the Institution, with specifications,
dy to give the necessary information to all applicants.
he day originally set as the last on which bids would be received, was the 10th of
rch; but as the specifications were delayed by the printers several days beyond
time appointed by the public advertisement for the inspection of bidders, the
mittee extended the time for receiving bids to the 15th March.
n the 16th of March the bids were opened, in the presence of the Building Com-
ttee and of the architect and superintendent. A number of these were found to
proposals to deliver materials only, or to execute a small portion of the work, as
brick work, alone; the stone cutting at so much per foot, &c. These are spread
the journal of the committee, and will be found to contain much valuable infor-
tion as to prices.
he bids to erect the building were found to be fourteen in number, and to vary in
ount from $196,000 to $318,000—the lowest being that of James Dixon & Co., of
shington, and the estimate being for Seneca freestone, laid up in rubble masonry.
e bids by the same firm, as given in the explanatory correspondence of the same
e and in a personal communication on the 18th March, for *ashlar* finish, were also
lowest put in, namely:

For marble ashlar	$228,500
And for Seneca freestone ashlar	205,250

After a careful examination of the subject, the committee decided that, to the par-
ular design as adopted by the Board, with its numerous vertical lines often closely
proaching each other, the finish of regularly coursed ashlar was the best suited
d would make a more substantial job than broken rubble.
They concluded, also, that with a complete conviction on their minds of the dura-
ity of the Seneca freestone, and with a doubt whether it did not assort even better
th the Lombard style of architecture adopted than marble, it was inexpedient to
pend twenty-three thousand dollars additional to obtain the latter material. They
formed James Dixon & Co., therefore, that their bid of $205,250 for the erection
the building in Seneca stone, finished in coursed ashlar, was accepted.
The result, your committee think, has proved that their selection of material was
udicious one.
On inquiry the committee found that the firm of James Dixon & Co. consisted of
mes Dixon, of Washington, and Gilbert Cameron, of New York. The latter gen-
man executed a portion of the work on Trinity church, and was a contractor on
lvary church, New York.
A contract was signed by the committee, and by Messrs. Dixon and Cameron, on
e 19th of March. It will be found, accompanied by the specifications, which make
rt of the same, on the journal of the committee. It includes a portion, but not
e whole, of the furniture; the portion included, however, being the most expensive
rt of it, and comprehending the shelving cases, desks, drawers, and tables, in the

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laboratory and apparatus room; the book-cases, large tables and alcove desks, in the library; the glass cases in the museum; the seats in the lecture rooms; the elevators, with sheaves and counter-weights; water-closets, completely fitted up; rain-water cisterns; and the chairs and table in the Regents' room. Flues for heating and ventilation are provided for, but the expense of heating and lighting is not included. Cess-pools are included, but no provisions for draining, according to the municipal regulations of the city.

The foundation walls, under the main central towers, are twelve feet thick at bottom, gradually diminishing to five and a half feet at the surface of the ground, and are sunk eight feet deep. The foundations of the rear central tower, excavated to the same depth, are ten feet, diminishing to five feet; of the campanile and octagonal towers also ten feet, diminishing to five and six feet deep. The thickness of the walls of the main building above the water table, is two feet and a half in the first story, and two feet in the second, exclusive of buttresses, corbel-courses, and other similar external projections, and exclusive, also, of an internal lining wall of brick, of the thickness of a single brick, tied at intervals to the wall, and intended to plaster to. The walls of the wings are two feet thick. The central towers are three feet and a half thick in the first story, diminishing to two feet in the highest story.

Inverted arches of hard brick, are turned under all the openings of the foundation. Groined arches are turned under the central towers, the campanile the octagonal tower, and the tower of the west wing.

The ashlar facing of the building is to be laid in courses from ten to fifteen inches in height, with a bed of nine inches, and the joints to be nowhere over three-eighths of an inch.

The basements, to contain the heating furnaces, also the janitors' rooms and the room to receive Smithson's personal effects, are fire-proofed. A pine floor, covered two inches thick with cement, is carried under the roofs of the whole building. The floors, where they are not fire-proofed, have a deafening of lime, clay, and sand.

The central stair-cases, front and rear, are to be of stone to the museum floor. The floor of the gallery of art, embracing the west wing and its connecting range, of the laboratory, including the east wing and part of its connecting range, of the central hall and the vestibules, also the floors of the basement under the laboratory, under the central towers, under the campanile and other towers, together with the cloisters, are to be flagged with North river flagging. The floor of the principal lecture room will also be flagged with flags, supported on brick cross-walls. The floors of the library and museum are to be of pine; and it is not proposed that either of these two rooms should be artificially lighted.

The laboratory wing is to be roofed with slate—the rest of the building, as the contract now stands, with sheet tin; but the committee propose to roof the main building and west wing with slate, paying the difference.

It was made a condition of the contract that the erection of the building should occupy a period of five years from its date, that term ending on the 19th of March, 1852. It was also agreed that the building should be erected in such proportions, during each year, as the committee might direct, but so that the payments to the contractor, in each of the first four years of the contract, should not exceed an annual amount of $41,000; and so that the wings and connecting ranges should be completed in two years from the date of the contract. Fifteen per cent. on the architect's estimates is kept back until the completion of the building; but interest is to be ultimately paid on this percentage, calculated from the dates of the several estimates.

On the suggestion of one of the Regents, not a member of the committee, and of the Secretary of the Institution, a supplement was appended to the contract, by which it was stipulated, that if the Board of Regents should hereafter determine to make important alterations in the plan of building, or in the time of its execution, then the contractor was to be paid pro rata, according to the prices in the contract, for work executed, and reasonable damages, if the nature of the case should justly demand it. In case of dispute as to the amount, the matter to be referred to the architect of the Institution, or any other architect selected by the committee.

The contractors gave as security for the faithful performance of the contract, W. H. Winter, of Washington, and Horace Butler, of New York. The security was approved by the committee; and a bond, with a penalty of fifty-two thousand dollars (being one-fourth of the amount of the entire contract) was executed accordingly.

The corner-stone of the building was laid on the 1st of May. The details of the ceremonies upon that occasion, including the address delivered, in accordance with an invitation from the committee, by the Chancellor, and which ceremonies were

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witnessed by six or seven thousand persons, will be found at large on the journal of the committee.

The contractors proceeded for sometime with the work in partnership; but on the first of June Mr. Dixon informed the Board that the work would thereafter be conducted by Mr. Cameron alone; and since that time, it has been entirely managed by that gentleman.

Mr. Cameron has since proceeded in the work with spirit, and has executed it, upon the whole in a manner satisfactory to the committee. Occasional departures from the letter of the contract have been pointed out to him, and he has promptly remedied whatever was complained of. He is now covering in the east connecting range, and hopes still to cover in the east wing, also, before he shall be arrested by frost; though he has been very much retarded in his operations, and has suffered some pecuniary loss by the breakage in the canal, caused by the late freshets. Since the 7th of October, when the first damage was done, until now, the canal has been closed, and not a perch of stone has been received. In another week or fortnight there is a fair prospect that the damage may be repaired, and water let into the canal. But for this accident the contractor would already have covered in the east wing of the building. He has now some twelve or fifteen thousand feet of stone lying ready quarried, and awaiting the re-opening of the canal.

The chairman of the committee recently visited the quarry and found the stone that had been quarried of excellent quality and color, the tint somewhat lighter than the average tint of the present building. It quarries with remarkable facility, and the supply is unlimited.

The contractor has commenced to lay the foundations of the west wing and west connecting range, but nothing whatever has yet been done towards the erection of the main building.

The style of architecture selected by the Board seems to meet with general approval. It may be taken as one evidence of this, that a church now in progress of erection in Stuyvesant square, New York, and of which the cost will reach some hundred and fifty thousand dollars, is built in the same style; as, by a perspective view of the same herewith submitted, the board will perceive.

The lot belonging to the Institution has been fenced in with a paling fence, whitewashed, which will last at least until the termination of the contract for the building. No measures have yet been taken for the erection of a permanent fence.

Water has been conveyed to the site of the building by tapping the fire plug at the engine house in Market Square. The pipe is a strong, leaden one, of inch bore, laid two feet below the ground, and the water is conveyed across the canal in an iron pipe of two inch bore.

The contract for the fence was taken by Joel Downer, and that to convey the water by Caleb Buckingham, both of Washington. A copy of their respective contracts will be found on the journal. After completing the work in a satisfactory manner, both of these gentlemen applied to the committee for extra compensation. Mr. Downer stated that the fence erected by him cost much more than the amount at which he contracted to complete it, and which was paid to him; and at one time during its progress—to wit: on the 22d of May—he offered to relinquish to the committee all he had done, if they would release him from the contract. This, however, they declined to do.

Mr. Buckingham handed in a bill of his expenses, showing a larger amount expended than that which, in accordance with the terms of his contract, was paid to him, and alleged that he had laid down a heavier pipe than, by the contract, he was required to do. On these grounds, he put in a claim for additional compensation. The committee declined to allow it, but informed Mr. Buckingham that the matter would be by them referred to the Board of Regents.

The Board will find the particulars of this case, and of that of Mr. Downer, in the minutes of their thirty-fourth meeting; and the committee beg to refer both cases to the Board, for their decision as to whether, in either case, relief ought to be granted.

The total amount expended on the building, and on the fencing of the lot, up to this date, the 1st December, including superintendence and all incidental expenses therewith connected, is $25,002.67, namely:

Paid to Cameron, contractor	$20,840 00
Buckingham, supplying water to building	650 00
Downer, for fence, $400; additional rail subsequently added, $60; whitewashing the same, $60	520 00
For architect's office	200 00
Coal bin	10 00

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Corner-stone	$3
Superintendence, including incidentals therewith connected, and allowance to architect for original plans	2,773
Total to 1st December, 1847	$25,002

The committee has made a careful estimate of the probable expenditure for the building and lot, all incidentals included, from the 1st December, 1847, to the 19th March, 1848, being the end of the first year of the building contract, and set it down at $10,467.50, thus:

Payments to contractor, about	$9,500
Superintendence and contingencies, about	967
Total from 1st December, 1847, to 19th March, 1848, about	$10,467

These two sums added together will give the total amount expended and to be expended for the above objects, from the commencement of operations to the end of one year from the date of the contract, about $35,470.17.

It will be observed that the amount paid and to be paid to the contractor within that year, will be less than thirty-one thousand dollars; that is, upwards of ten thousand dollars less than the annual payments to which, by the contract, the contractor is restricted.

The item of superintendence, with its incidentals, is a considerable one. It is larger this first year than it will be in any subsequent one: first, because of an allowance of about two months' salary to the architect, not in payment of his design, but to repay the actual expenses incurred during these two months and previously, in the mechanical execution of plans and sections of the building, including those which embodied the modifications of the original design suggested by the committee appointed on the 9th September, 1846, and subsequently adopted by the Board; and secondly, because it was necessary to engage the services of the architect and superintendent about a month before the actual signature of the contract.

The annual expense of superintendence is necessarily increased by the circumstance that the architect does not reside in Washington. The committee could not afford to offer him a salary which might have induced him to abandon his New York business, and as in consequence he could be present during a portion of his time only in the city, the alternative was presented to them either to leave the work, during his absence, under the control of the contractor, trusting wholly to his judgment and to his scrupulous observance of the contract, or to engage the services of a superintendent who might be always on the spot, to see that no faulty materials nor insufficient work was admitted into any portion of the structure. They considered this latter the more prudent course, and engaged as superintendent a gentleman of much experience as an architect and builder, at a salary of $1,000 a year. To the principal architect they gave eighteen hundred a year and his traveling expenses—which, as he usually passes between New York and Washington once a month, amount to about three hundred a year—together with actual expenses for stationery, being from fifty to a hundred dollars annually.

In connection with this item of superintendence, the committee remark, that the labor and expense of preparing working plans in a style so novel as the Lombard, and for a design so irregular as that which has been adopted, are very much greater than if the style were one common in this country, or the design characterized by greater regularity.

The expenses necessarily incurred by the Building Committee—which, however, are small, as one member only of that committee is a non-resident of Washington—are not included as part of the expense of the building; both because a considerable portion of their attention was directed to objects other than the building, hereafter to be mentioned, and with which they were charged by the Board, and also because they consider the information embodied in their journal, herewith submitted and in this report, to be more than an equivalent, in its value to the public, for the small sum to which their expenses amount.

In regard to the probable expense of completing the building, including its fitting up and furnishing, its lighting, heating, drainage, &c., the laying out, planting, and permanent fencing of the lot, and all other expenses therewith properly connected, as compared with appropriations heretofore made for these objects, the committee report as follows:

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It will be within the recollection of the Board that, on the 28th of January last, olutions were passed by the Board making the following appropriations:

e contract for the building not to exceed		$281,000
tting up and furnishing the same	"	20,000
arming and lighting the same	"	5,000
rmanent fence around the grounds	"	10,000
ying out and planting the grounds	"	4,000
Together		$270,000

No special appropriation was made for superintendence; but the committee was powered, by resolution of the 28th January, in accordance with the fifth section the act organizing the Institution, to "employ one or more persons to superintend e erection of the building," and they were required to cause the work to be done to the entire satisfaction of said superintendent or superintendents." The committe believe that there is no example in this country of the superintendence of a building as extensive as that of this Institution, costing, including all remuneration to e architect for the original design, and all incidentals appertaining to the architect's ice, less than $3,000 a year. The salary paid to a resident superintending architect such a building, when it is his own design, is usually, without reckoning incintals, either $2,500 or $3,000 a year. The committee are justified, then, in setting wn the entire item of superintendence, (not included in the above appropriations,) ith its incidentals, at $3,000 a year. In consequence of the principal architect siding in New York, it actually costs a trifle more.

Nor was any appropriation made to supply the building with water. This item, der a favorable contract, has cost $650.

The item of drainage, also, was omitted. In consequence of the municipal regulaons of Washington city, it will cost from $1,000 to $1,500. The committee has put down at $1,350.

If we add to the appropriations specifically made, these necessary items, it will pear that the scale of expenditure to which, by the action of the Board, the Building Committee have been limited for the completion of the building and grounds, incidentals included, was about $287,000, thus:

pecial appropriations, already enumerated	$270,000
uperintendence, including incidentals, say five years, $3,000 a year	15,000
rainage, say	1,350
upplying water to the building	650
	$287,000

The contract, however, for the building, has been taken at a rate much lower than he Board seem to have anticipated; at a rate, too, to the credit of the architect it hould be stated, $15,000 below his estimates. And the contractor has proceeded so far ith the erection that the committee has had a good opportunity to judge of his cometency and willingness to complete the whole under the conditions of the contract. Unless prevented by accident not to be foreseen or anticipated, they do not doubt hat he will do so. Under these circumstances, although the committee is aware hat, in the execution of so extensive a work, many contingencies must be expected ecessarily to present themselves, that will add to its cost; yet they confidently elieve, that by judicious management and strict economy, the entire expenditure or the erection of the building, including the fitting up and furnishing of the same; upplying the same with water; laying out the lot in grass and planting it with trees nd shrubs; fencing the same, both with the present temporary fence and the ultinate permanent one; also all expenses for superintendence of erection, including the ost of architect's office and other incidentals, so as, in fact, to cover all expenses hatever that have been incurred, or are to be incurred, on the building and on the ot on which it stands, until the completion of the building and of the preparation f the lot, up to the 19th of March, 1852, need not exceed $250,000, being $37,000 ess than the sum total, according to the scale of appropriation, heretofore adopted y the Board.

So confident is the committee of the accuracy of the above opinion, that they are illing to see passed by the Board stringent resolutions rescinding former appropriaions for these objects, and restricting the committee, in their entire operations, to the bove amount.

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By a resolution of the Board of the 5th of February last, the preparation and publication of a work to be entitled "Hints on Public Architecture," and to contain, among its illustrations, views and plans of the Institution building, was intrusted to the committee; and an appropriation of $1,000 was made for that purpose.

In carrying out that resolution, the committee made with Messrs. Wiley & Putnam, one of the most respectable publishing firms in New York, a contract, of which a copy will be found on their journal; according to the terms of which, the committee agrees to furnish the entire illustrations, which it is stipulated shall not be of less value than $1,000; and the publishers, without further cost to the committee, agree to furnish a thousand copies of the volume bound in cloth, provided the letter-press does not exceed one hundred and fifty pages.

In order to give increased value to the work, the committee applied to several public bodies, having control of edifices of which the architecture is of reputable character, for plates of the same. In the case of one of the New York churches they were successful, and they hope to obtain in the same way plates of one or two other public edifices. The particulars of these applications will be found at large on their journal.

The committee hope to make this treatise, of which a portion of the manuscript is prepared, a work of practical importance, and of national interest. Among the resolutions on the journal of the committee, several will be found relating to this subject, and providing, among other things, that the forthcoming work should include a comparative review of the advantages, economy, and facility of adaptation to modern purposes, of various styles of public architecture, particularly the Grecian, Roman, modern Italian, Gothic of different ages, and Norman; giving the actual cost, compared to extent of accommodations, of some of the principal public edifices in the United States, in the various styles, including some of the public buildings erected in Washington, and elsewhere, by the General Government; also, that, so far as the funds permit, the work shall contain illustrations, in the best style of art, representing such among the public buildings of the United States as exhibit the purest specimens of architecture, in various styles, including two perspective views of the Smithsonian Institution on steel; and including, also, one or more perspective views of the best designs for the Institution, offered in competition.

To execute such a plan as this in a reputable manner, the illustrations, including numerous wood cuts, essential to a proper elucidation of the text, will, the committee have ascertained, cost more than the sum heretofore appropriated. The two steel engravings of the Institution building in perspective cannot be obtained, executed in the best style of art, for less than $350 to $400 for the two. The committee ask, therefore, of the Board an additional appropriation of $1,000. By reference to a supplement recently made to the original contract with Wiley & Putnam, and of which a copy is given in the minutes of the forty-first meeting of the committee, the Board will perceive that such an additional appropriation, expended on illustrations, will entitle us to an additional hundred pages of letter-press; making in all two hundred and fifty pages. This the committee consider important, as it is doubtful whether the number of pages to which, by the original contract, the volume was restricted, will suffice for the purpose of the work.

It will require six months, properly to execute the illustrations of this work; so that it cannot be published before next summer or autumn. The committee will proceed in its preparation as rapidly as is consistent with the proper execution of the work.

It is the purpose of the committee to add to this work, as an appendix, the result of the experiments heretofore (to wit, by resolution of the first of March last) authorized by the Board, to determine the economical value of the different building materials used in the United States. This will give to the work additional value for builders, carpenters, and mechanics, generally.

For further particulars regarding the various subjects touched on in this report, the committee beg to refer the Board to the copy herewith submitted, of their journal. They think it would be useful to make that copy a portion of the annual report of the Board to Congress.

They submit also, herewith, the original contracts with Dixon & Cameron, Joel Downer, Caleb Buckingham, and Wiley & Putnam; and the security bond signed by Dixon & Cameron, Winter, and Butler.

All which is respectfully submitted,

ROBERT DALE OWEN.
W. W. SEATON.
JOS. G. TOTTEN.

DECEMBER 7, 1847.

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rnal of the Building Committee from the 17th February to the 1st December, 1847.

First Meeting, February 17, 1847.

resent, Messrs. Seaton, Hough, and Owen. (Mr. Owen, Chairman.)

n motion of Mr. Hough, it was—

esolved, That Robert Mills, architect, be superintendent, at the rate of $1,000 per um, to commence at this date, and continue at the pleasure of the committee.

[r. Renwick, architect, being present, was requested to see Mr. Mills and engage services.

n motion of Mr. Seaton, it was—

esolved, That 100 copies of the specifications prepared by the architect be printed, the use of contractors.

nd, on motion, the committee adjourned.

Second Meeting, February 28, 1847.

resent, Messrs. Seaton, Hough, and Owen.

he chairman laid before the committee the following letter from the Hon. Louis Lane:

BALTIMORE, *February* 22, 1847.

EAR SIR: I understand from our chief engineer that Mr. Howard will recommend to his board of directors, on Wednesday next, to agree to transport the marble their railroad at 2½ cents per ton per mile; and if that rate be adopted, I should ommend the adoption of a similar charge upon the road of this company. My al answer, therefore, must await the action of the other company.

I am, dear sir, very respectfully, your obedient servant,

LOUIS McLANE.

o the Hon. ROBERT DALE OWEN.

n motion of Mr. Hough, it was—

Resolved, That Mr. Renwick be allowed annually the sum of $1,800 for superinidence, besides his necessary traveling expenses between New York and Washing-, and the neeessary incidental expenses of the architect's office; the said salary to mmence on the day his plan was adopted by the committee of five.

he chairman laid before the committee a letter from Philip McGaughlin, dated int of Rocks, Frederick county, Maryland; in which he informs the committee at a quarry of the very best marble, and of great extent, is to be found there, close the Chesapeake and Ohio canal, and has been examined by himself, and asks the mmittee to send some suitable person to examine the same.

On motion of Mr. Seaton, it was—

Resolved, That Dr. Owen be requested to proceed to visit the said quarry, and also e marble quarries in the vicinity of Baltimore, and to report thereon to this comittee; also, that he be requested to aid Mr. Renwick by preparing the drawings for e chemical department.

The chairman stated to the committee, on the part of Dr. Owen, that any services erformed by him for the Institution would be gratuitous; his actual traveling and her necessary expenses only being paid.

On motion, the committee adjourned.

Third Meeting, March 1, 1847.

Present, Messrs. Seaton, Hough, and Owen.

The chairman laid before the Board the following letter from Mr. Samuel Worthington, of Maryland, brother of the ex-member of Congress of that name:

BALTIMORE COUNTY, *February* 26, 1847.

b the Building Committee of the Smithsonian Institution.

GENTLEMEN: I will agree to furnish, and have placed on cars at Cockeysville, any uantity of marble for rubble work, from the quarry, undressed other than broken t near the required size as practicable, at $1.25 per perch; or, if by the ton, at $1 er ton. Any marble that may be wanted other than the above, I will deliver on

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cars, as above, at 70 cents per cubic foot for all sizes under forty feet, and for above forty feet 85 cents per foot.

Respectfully, your obedient servant,

SAM'L WORTHINGTON.

The chairman laid before the committee a reply prepared by him to the above letter, as follows:

WASHINGTON, *March* 1, 1847.

SIR: I yesterday received your letter of the 26th of February, addressed to the Building Committee of our Institution, and shall lay it before the committee, which meets to-day.

Will you have the goodness, in addition to the proposals contained in your letter, to state to us at how much *per perch of twenty-five feet, measured in the building*, you would be willing to rent to us the quarry-right for so much marble as we may require for our building—say about five thousand perches in all.

I think the Maryland marble, including the specimens I have seen from your quarry and from others in the neighborhood, is of very fair quality, and only needs a reputation to bring it into general use. But it is necessary for us to get the quarry right low, or else the New York marble, which is also of excellent quality, will come into competition with it. The owner of the Hasting's quarry, on the North river, has offered the quarry-right, for the sake of the reputation it will obtain if selected by our Institution. But I think the freight from there may be a trifle higher than that by railroad, if the railroads come down, as I think they will, to 2½ cents per ton per mile.

Whatever material and quarry we may select, the particulars regarding it will be published by us in connection with the plans of the building, and a copy sent to every literary and scientific society of any importance not only in this country, but throughout Europe. The reputation of the quarry we may select will therefore be known all over the world.

If we contract for the quarry right, we shall have to do so subject to the decision of the two railroads to reduce their freight to 2½ cents per ton per mile.

This will be handed to you by my brother, Dr. Owen, a geologist, who is instructed by our Board carefully to examine the various Maryland quarries, including one at the "Point of Rocks," from which specimens have recently been sent to us. You will oblige the committee by affording Dr. Owen every facility to examine your quarry.

If we agree to rent of you the quarry right, we should expect to go into the quarry where you are at work. But this need not at all embarrass your own operations.

If we agree to pay half the expenses of a railroad to connect your quarry with the York road, so that the cars could be loaded in the quarry, will you agree to pay the other half? Please reply to this.

I am, sir, your obedient servant,

ROBERT DALE OWEN,
Chairman of Building Committee.

SAMUEL WORTHINGTON, Esq.

The reply was approved by the committee.

The chairman laid before the committee a letter from Wm. Robinson, owner of a Maryland quarry of "white primitive stone," which he offers for the Smithsonian building.

Referred to Dr. Owen.

The chairman laid before the Board a letter from Peter Gorman, stating that he had found a quarry superior to any other he had visited, (Samuel Worthington's,) and which could be rented on cheap terms.

The chairman informed the committee that he had seen Mr. Gorman since the receipt of this letter, and he (Mr. G.) stated that Mr. Worthington was willing to rent his quarry for the purposes of the Institution at *twenty cents per perch* quarry right.

Letter laid on the table.

The chairman laid before the committee the following letter from Mr. Howard, President of the Baltimore and Susquehanna Railroad:

OFFICE OF THE BALTIMORE AND SUSQUEHANNA RAILROAD COMPANY,
BALTIMORE, *February* 24, 1847.

DEAR SIR: In compliance with your request, I submitted, to-day, the proposition that we should unite with the Baltimore and Ohio Railroad Company in transporting

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rough marble for the Smithsonian Institution, from the quarries in Baltimore county to Washington, at a charge of 2½ cents per ton per mile for the whole distance.

I regret that I cannot yet give you an answer. The period has now arrived for the appointment, by our legislature, of directors of the company on the part of the State, who will constitute a majority of the whole board.

Expecting every day to hear of such appointment being made, the directors have not deemed it expedient to enter at this moment into a contract which will last for several years, and thereby forestall the action of their successors, should the Legislature think proper to make any changes in the board.

This question will probably be settled before this day week, when I hope to be prepared to give you the decision of the company.

Hoping that this unavoidable delay may not be productive of any inconvenience to the Regents of the Institution, or to the committee of that body with which you are acting.

I am, very respectfully, your obedient servant,

CHARLES HOWARD, *President.*

Hon. ROBERT DALE OWEN, *Chairman of Building Committee.*

The letter was laid on the table.

On motion of Mr. Seaton, it was—

Resolved, That, as the specifications were not furnished by the printers by the time appointed by public advertisement, for the inspection of bidders, the time for receiving bids for the work specified in the advertisement of the Building Committee be extended from the 10th to the 15th instant.

On motion, the committee adjourned.

Fourth Meeting, March 6, 1847.

Present, Messrs. Seaton, Hough, and Owen.

Mr. Seaton laid before the committee a letter from Mr. Peter, owner of a quarry on the margin of the canal, near the mouth of Seneca creek, as follows:

MONTE VIDEO, NEAR DARNESTOWN,
MONTGOMERY CO., MARYLAND, *December* 9, 1847.

DEAR SIR: Yours of the 5th instant was received by yesterday's mail, in which you state that the Regents of the Smithsonian Institution have in their possession a specimen of red sandstone, taken from my quarry, on the margin of the canal. I am unable to determine from which particular quarry the specimen they have in their possession was taken, as several have been opened, and there is a continuous line of a mile in length of similar stone, equally convenient to the canal.

The aqueduct at the mouth of Seneca creek, and many of the locks, both above and below, are constructed of stone derived from my land.

The jury, in condemning the quarries for the use of the canal company, allowed me twenty-five cents a perch for the backings; that is, all stone intended for cut work, twenty-five cents—all calculated for hammered work, twelve and a half cents a perch; and for these prices would I grant permission to obtain stone for any purpose.

The excellence of the material—for it is capable of withstanding any exposure—the facility with which it is obtained, and the ease with which it may be transported by the canal to the spot where required, would, I should suppose, give it a decided preference over any stone which could be brought in competition with it, for the purposes of the Institution.

As to quantity, it is unbounded, and in texture and shade a great variety; and in such a building as, I have no doubt, the Smithsonian Institution will be, would present not only an appropriate, but a pleasing contrast with the other public edifices in Washington.

It would afford me great pleasure to see it selected by the Regents as the material of which the edifice shall be constructed; and the very liberal price at which it is offered, may, I hope, have its influence in securing its adoption.

It will afford me pleasure to answer any inquiry the Regents may desire to make in relation to the stone, and to afford every facility to an agent, should they think proper to send one, in making any examination.

Yours, very respectfully, JOHN P. C. PETER.

W. W. SEATON, Esq.

On motion of Mr. Seaton, it was—

Resolved, That on the return of Dr. Owen from the marble quarries of Maryland,

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he be requested to visit the different sandstone quarries in the vicinity of Seneca creek, and make a report on their extent, and their general character and fitness for furnishing a suitable material for the Smithsonian building.

Mr. Owen submitted the following letter:

BALTIMORE COUNTY, *March* 6, 1847.

SIR: Yours of the 1st instant has been duly received, and, in reply, I would state that I am almost entirely uninformed as to the sizes of the stone required, and am at a loss how to propose for the material.

If you would do me the favor to send me, immediately, a specification of the stone wanted, I will then propose for the stone, whether the rubble stone is to be worked and made ready for the mason, or in the rough state from the quarry.

You may have misapprehended my former letter; that was for the rough and the ordinary size building stone. As to the quarry-right, the price would depend much on which quarry you might want the right to quarry into; I have several. I should be much pleased to furnish you with what stone you may want, should you determine to use our stone, and think the material to be as good as any in our neighborhood.

Please write immediately on the reception of this, in order that I may have time to propose by the 20th instant. I was this day with some of the directors of the Susquehanna road, and I think they will agree to take the proposed amount—that is to say, 2½ cents per mile.

Respectfully, your obedient servant, SAMUEL WORTHINGTON.

Hon. R. D. OWEN, *Chairman of Building Committee.*

On motion of Mr. Seaton, it was—

Resolved, That the reply to the above be postponed until the return of Dr. Owen from Maryland.

The chairman laid before the committee the following report from Dr. Page, appointed to make examination of building materials:

To the Building Committee of the Smithsonian Institution, on the action of frost upon certain materials for building.

Of the twenty-five specimens of stone submitted to me for examination with reference to their relative properties in resisting the disintegrating action of frost, I have been able to investigate but twenty-two; the remaining specimens, marked, respectively, 1, 9, 5 D, being too small to submit to the test. It was thought desirable to ascertain their specific gravities, with a view to determine if any connection existed between their densities and liability to dilapidation. The result leads us to infer that such relation does not exist, and that the texture of the stone, without reference to density, determines the frangibility under the influence of frost. Resort was had in these experiments to an *imitation* of the operation of freezing water after the process described by Brard, a French chemist, in the "*Annales de Chimie et Physique*," vol. 88. The details of the process will presently be given.

The absorption and subsequent freezing of water within the stone would have been a more energetic mode of action; but the undertaking would prove one of considerable practical difficulty, and, on the whole, not so reliable as an experiment, unless, perhaps, the circumstances were such as to admit of their exposure to *natural* freezing under favorable circumstances.

The process of Brard consists in substituting the crystallization of the sulphate of soda for the freezing of water, and has met with the approval of many French architects and engineers, as the results accord with their experience. In the freezing or crystallization of water, the expansion is such, that the crystals float; while in the crystallization of sulphate of soda, and other soluble salts, the crystals sink in the solution; but, notwithstanding, the exertion of the crystalline forces of these salts is sufficient to produce decided impressions upon the hardest of building materials in a few weeks.

The specimens of stone furnished me by your Board were all numbered as according to the subjoined table; and it may be proper to remark, that their localities and respective values, as usually estimated, were unknown to me until after the results of the experiments had been laid before you and approved.

Six numbered specimens were also handed to me by Mr. Dewey, and are marked, respectively, 1 D, 2 D, &c. The specimens were cut into inch cubes; three of the whole number being of insufficient size, were laid aside, as above mentioned. The cubical blocks, suspended by strings, to which the respective numbers upon labels were attached, were first immersed in a boiling solution of sulphate of soda, saturated when cold; and after remaining half an hour in the boiling liquid, they were

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removed and hung upon a frame over half-pint bowls, containing also a quantity of the cold saturated solution.

In the course of 24 hours a considerable efflorescence was found upon the surface of each specimen, consisting of the crystals of the salt mixed with comminuted portions of the stone. These were washed off daily, by simultaneously immersing the stones in the solution in the bowls, and suffering them to remain there for a few minutes. This proceeding was repeated daily for one week, when it became necessary to deviate from Brard's directions, and to keep them in a moderate temperature, instead of a cold cellar, as he advises. It was obvious that the investigation would be exceedingly protracted unless the crystallization of the salt were promoted by moderate warmth, as by this time the detritus from some specimens was hardly visible.

After the change, the process went on with greater rapidity; and at the end of four weeks the dipping was stopped, and the sediment or deposit in each bowl was carefully weighed, and furnished the results as given in the table. In some cases the comminution of the stone was exceedingly fine; and in the washing and decanting process, ample time was allowed for the deposit to settle after each washing, and the utmost care used in the subsequent operations of decanting, drying, and weighing. The time of one week for the operation of dipping the stones in the solution was not deemed sufficient, as the deposit from the marbles and some other varieties was hardly apparent; and it was, therefore, continued, as above stated, four weeks, and thus the slight errors of manipulation, if any occurred, are proportionally diminished.

Disintegrating effects of frost upon stones used for Building Materials.

Specimens Marked.		Specific gravity.	Loss by frost, in grains.
No. 1	Not tested; the specimen being too small.		
No. 2	Symington's close-grained marble (similar to Worthington's)	2.884	0.19
No. 3	Connecticut sandstone, coarsest grained quality.*		14.86
No. 4	Dark red Seneca sandstone (similar to Peter's)	2.672	0.70
No. 5	Symington's large crystal marble	2.857	0.50
No. 6	Symington's blue limestone	2.613	0.34
No. 7	Coarse, large crystal marble, Mt. Pleasant, New York	2.860	0.91
No. 8	Port Deposit granite	2.609	5.05
No. 9	Too small to examine.		
No. 10	Trinity sandstone, fine grained and light colored *		1.58
No. 11	Connecticut sandstone, finer grained quality	2.583	24.93
No. 12	Nova Scotia sandstone, coarse grained	2.518	2.16
No. 13	Light Seneca sandstone, dove-colored	2.486	1.78
No. 14	Pennsylvania marble, close-grained	2.727	0.35
No. 15	Pennsylvania blue limestone	2.699	0.28
4 T C	Trinity Church light colored, close grained sandstone, New Jersey	2.482	0.62
P O	Patent Office light sandstone	2.230	18.60
S B	Soft brick	2.211	16.46
H B	Hard brick	2.294	1.07
1 D	Granite from Potomac Great Falls*		0.35
2 D	Dark coarse sandstone, of Seneca aqueduct, Peter's quarry *		5.60
3 D	Sandstone, four miles above No. 2 D, Peter's, next west of Beaver dam quarry*		1.58
4 D	Dark sandstone, from quarry near Wood's residence*		3.94
5 D	Not tested, specimen being too small.		
6 D	Lower stratum, Beaver dam quarry*		1.72

* Specific gravity not ascertained.

Respectfully submitted, by CHARLES G. PAGE.

WASHINGTON, D. C., *March* 5, 1847.

Laid on the table.

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On motion of Mr. Seaton, it was—

Resolved, That Mr. Hough be a sub-committee to revise the details of the specifications, with a special reference to the solidity, security, and economy of the building, and to report thereon to this committee; specifying what changes, if any, he may deem necessary or expedient.

On motion of Mr. Seaton, the following resolution was adopted:

Whereas the Board of Regents did, on the 5th day of February, pass the following resolution, to wit:

"*Resolved*, That the Building Committee, in conjunction with the Secretary, be authorized to publish, in such form as they may deem most appropriate, one thousand copies of a brief treatise, to be entitled "Hints on Public Architecture," and to be illustrated with designs of the plan of the building adopted for the Smithsonian Institution, and at the option of the committee, with any other designs that are the property of the Institution: *Provided*, That the cost of the same shall not exceed one thousand dollars, which sum is hereby appropriated for that purpose;" Therefore—

Resolved, That Mr. Owen be a sub-committee to prepare, after consultation with the Secretary, the said treatise, and to contract for the necessary illustrations; provided he submit the same to this committee before publication.

The chairman submitted a table of the value of different kinds of plank and scantling—Mount Crawford, Rockingham county, Virginia.

Referred to the architect.

On motion, the committee adjourned.

Fifth Meeting, March 12, 1847.

Present, Messrs. Seaton, Hough, and Owen.

The chairman laid before the committee the following letter from the chief engineer of the Baltimore and Ohio Railroad Company:

ENGINEER'S OFFICE, BALTIMORE AND OHIO RAILROAD,
BALTIMORE, *March* 1, 1847.

SIR: I have been requested by Mr. McLane, the president of this company, to communicate to you that the Baltimore and Susquehanna Railroad Company has not yet decided to join this company in the transportation of marble, in the rubble form, to Washington, for the buildings of the Smithsonian Institution, at the rate (2½ cents per ton per mile) suggested by you. The president of the Susquehanna Company informed me to-day that he would apprize you by letter of the reasons of the delay on the part of his company.

I have only now, by Mr. McLane's desire, to repeat that the Baltimore and Ohio Company is ready, upon reasonable notice, to enter into the transportation, whenever the Susquehanna Company is prepared to unite with it in the operation, at the rate which has been mentioned.

I am, sir, very respectfully, your obedient servant,

BENJAMIN H. LATROBE,
Chief Engineer.

Hon. ROBERT DALE OWEN.

Laid on the table.

The chairman laid before the committee the following letter from the President of the Baltimore and Susquehanna Railroad Company, relative to rates of freight:

OFFICE BALTIMORE AND SUSQUEHANNA RAILROAD CO.,
BALTIMORE, *March* 8, 1847.

DEAR SIR: I am now authorized to say that the president and directors of this company will unite with those of the Baltimore and Ohio Railroad Company in an agreement to transport the limestone or rough marble for the building of the Smithsonian Institution, from the quarries on the line of the railroad of this company to Washington, a distance of 53 miles, for 2½ cents per ton of 2,000 lbs. per mile. The company will agree to carry 75 tons per week whenever required.

From the communications I have had with the officers of the Baltimore and Ohio Company, I feel well assured that no difficulty will be experienced in making such

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an arrangement with the two companies as will be entirely satisfactory to the Building Committee of the Regents, and to the person with whom they may contract.

Very respectfully, your obedient servant,

CHARLES HOWARD, *President.*

Hon. ROBERT DALE OWEN,
Chairman of the Building Committee.

Laid on the table.

The chairman laid before the committee the following letter, containing proposals to furnish marble from the State of New York:

NEW YORK, *March* 6, 1847.

GENTLEMEN: I will furnish white marble from my quarry, at Hastings, on the Hudson river, for the Smithsonian Institution, as follows:

110,000 feet of rubble facing, one foot thick, at 80 cents per foot, measured in the wall ---------- 80 cents.
20,000 cubic feet dimension, one foot thick, for cutting, at 98 cents per cubic foot ---------- 98 cents.

Delivered in the city of Washington.

Very respectfully,

JOHN B. GLOVER.

A. R. RAYMOND, *Bondsman.*

Hon. ROBERT DALE OWEN,
WILLIAM J. HOUGH,
W. W. SEATON,
} *Building Committee.*

Laid on the table.

The chairman laid before the committee the following letter, making proposals to furnish marble from Massachusetts:

WEST STOCKBRIDGE.

DEAR SIR: I understand from Mr. Hooker, of New York, that your plan has been adopted for the Smithsonian Institution, and that you are receiving proposals for marble for buttresses, blocks, caps, coping, and ornamental bands. I submit the following proposition for your consideration:

I propose to furnish you blocks of marble, for all sizes under 4,000 lbs. weight, for eighty cents per cubic foot, trimmed near the size, and delivered at Washington.

I have not the plan before me. Mr. Hooker states that there will be from twenty-five to thirty thousand feet of said stone; if that is the quantity, I will pledge myself to furnish it in two years from the date of contract, or comply with your terms in regard to time.

Yours, &c., MILO M. PARRISH.

Surety—Thomas Milligan, Wm. Milligan, Gilbert Milligan.

Mr. RENWICK, *Architect.*

N.B.—Furthermore, I think that it would be advisable to try Stockbridge marble; it can be worked for some six cents cheaper than any other marble in this country.

Mr. Thomas Milligan was one of the firm of Leonard and Milligan, who had a contract on the water-works at Dobb's ferry.

Laid on the table.

The chairman laid before the committee the following letter, making proposals to furnish lumber, from Philadelphia:

PHILADELPHIA, *March* 9, 1847.

GENTLEMEN: I do hereby propose to deliver all the lumber required in the erection of the Smithsonian Institution, including hemlock, white pine, yellow pine, (including the flooring,) for the sum of twenty-six dollars per thousand feet, and will give security for the faithful performance of the contract.

I consider my bid as worthy the notice of the committee, and would be glad to confer with them on the subject, should they deem it advisable.

I have on hand a large supply of seasoned lumber, and arangements for the supply of any quantity wanted.

I would respectfully refer the committee to the Hon. James Buchanan, Secretary of

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State, should they desire information as regards my ability to perform any engagements I may enter into. Please address me at this place if you wish me to go on to the city of Washington.

Very respectfully, your obedient servant,

SAM'L M. LEIPER.

To the BUILDING COMMITTEE OF THE SMITHSONIAN INSTITUTION.

Laid on the table.

The chairman submitted, from Dr. David Dale Owen, the following report on the Baltimore county quarries:

To the Building Committee of the Smithsonian Institution:

GENTLEMEN: In conformity with your instructions, I have examined a number of quarries in the vicinity of Baltimore, and also one at the Point of Rocks, with a view to ascertain the extent and quality of the building material they furnish, and report as follows:

Extensive quarries of white crystalline marble commence about twelve and a half to thirteen miles from Baltimore, near a small village called Texas, or Clarksville, on the line of the Susquehanna railroad.

The first quarry visited is that owned by Fell and Robinson, who are largely engaged in lime burning. It lies on the west side of, and only a few paces from, the main track of the railroad. The surface layers are, by barometrical measurement, forty feet above the level of Cold Spring creek, a small stream running through this quarry; and ledges of marble extend down to the banks of that stream and form its bed; varying, however, at different heights, somewhat in texture and appearance.

The purest variety in this quarry is of a coarse and highly crystalline structure, varying in tint from a pure white to a faint shade of bluish or grayish white, as may be seen by inspection of the various specimens. It is known to the quarrymen under the name of "*alum limestone.*"

The course of this purer variety is northwest and southeast, with an average width of 150 feet, and extending 525 feet back to Fell and Robinson's west boundary line. Taking the average depth of this quarry at 18 feet, its solid contents may, therefore, be estimated at $18 \times 150 \times 525 = 1{,}417{,}500$ cubic feet, or 56,700 perches, in this single quarry.

North of this white crystalline marble, the rock gradually assumes a shade of blue or gray, as may be observed by inspecting specimen No. 4.

The upper layers at Fell and Robinson's quarry are banded with light gray veins. Below this are at least three feet of pure, highly crystalline, white limestone. Judging from specimens detached from the inferior projecting layers, there is evidently a great body of the same kind of rock beneath, with probably some banded beds, similar to the upper beds previously described.

On the east side of the railroad and close to it, some four hundred or five hundred yards from Robinson and Fell's quarry, Griscom and Borrough have opened quarries. The rock here is of the same character as that in Robinson and Fell's quarry, and equally good; see specimens Nos. 2 and 2*a*. Some nests in this quarry are of a closer grain than the main beds; see specimen No. 2*ab*.

The ledges of this rock, wherever it projects through the soil, and has been exposed probably for ages, have a dark appearance on the surface, apparently from incrustations of lichen; but when broken, the discoloration is seen to be superficial, not extending at all into the substance of the rock; see No. 5*b*.

The dip of the beds seems to be generally to the southwest, at an angle of perhaps 20° to 25°.

There is no difficulty in draining these quarries, since there is twenty to forty feet of rock entirely above the level of water drainage.

The top layers are sometimes in detached and more or less rounded masses; owing, no doubt, to the corrosive influence of water containing carbonic acid, or some organic acid, percolating through the superficial soil, corroding and dissolving the accessible edges of the calcareous layers.

Over the upper beds lies usually ferruginous earth of deep red color, forming a remarkable contrast to the snow-white marble beneath; indeed, this appearance on the surface might, perhaps, often serve as a guide to the detection of the white marbles of this region.

Symington's quarry lies in the same vicinity, about three hundred to four hundred yards from the main track. The owner of this, as well as the other quarries here,

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intend to have *switches* (that is, lateral branch railroads) running into their quarries.

The rock here is of a rather finer crystalline structure than that of the preceding, with a slight cast of blue; see specimens Nos. 8 and 8*a*. A solid bed is exposed, of nearly uniform texture, about nine feet thick. Blocks weighing several tons are now lying in the quarry. At the top of the quarry there are some beds with gray mica disseminated; such must, of course, be rejected. The dip is here as at the other quarries.

Thirteen and a half miles from Baltimore and half a mile east of the railroad, and about one mile northeast of the previously described localities, is a quarry on land owned by Chisilla Owens. The rock here is also a white and highly crystalline marble, of a good color, similar to that in the vicinity of Texas; but the quarry is not yet opened; the surface indications are, however, very favorable for a body of good "alum limestone." For sample of this material, see specimen No. 6.

In the vicinity of the same railroad, a little further to the north, in the neighborhood of Cockeysville, fourteen to fifteen miles from Baltimore, are several other marble quarries.

The first visited was on land owned by Messrs. Taylor, and situated about a quarter of a mile west of the railroad. The rock exposed here differs from that of the Texas quarries, in being rather closer grained and the surface layers more granular; see specimen No. 5. At this locality a block was got out upwards of seventeen feet long, which was presented to the Building Committee of the Washington Monument at Baltimore; out of this block the statue on the summit was sculptured.

Loose blocks of similar character to that in the quarry are seen all over the surface of the adjacent hills.

The lower beds are not exposed in Mrs. Taylor's qaarry.

Four hundred to five hundred yards nearer the railroad, a better cemented and rather more compact marble crops out to the surface; but no quarry is opened here to enable one to form a correct judgment as to the extent, thickness, or uniformity of the beds. Still, from the persistency of the same material throughout this region, one may predict, with tolerable certainty, that there is here, deeper seated, a great mass of valuable material.

Part of the marble employed in the construction of the Washington Monument at Baltimore was obtained at this quarry of Mrs. Taylor's, and part of it from Scott's quarries, five miles further to the North. The latter is said to be of an inferior quality. Of this I had no opportunity of judging personally, as I did not visit the quarry, thinking it was too far out of the way.

Three quarters of a mile from the railroad, and a mile and a half or two miles northeast from Texas, is another quarry, on Mrs. Taylor's property. This quarry has been wrought for fifteen years, and supplied Baltimore with a great deal of marble. The upper layers, (see specimen No. 5*b*,) at this place, are, from some peculiarity, either of texture or chemical composition, much disposed to crumble to calcareous sand, which has been employed to advantage as a mineral manure on land. The inferior beds are of a sounder material, and lie more regularly than usual, but the rock is not of as pure a color, being banded with gray stripes; see specimen 5*c*. Dip very slight to the south.

One hundred yards south of this is another quarry, on Chisilla Owen's property. This rock is of a beautiful texture and good color, as may be seen by specimens No. 5*d* and No. 7. It lies in tolerably distinct strata, and nearly horizontal, but it is traversed by minute cross-fissures, which detract much from the value of the material, inasmuch as large, solid blocks cannot be got out, at least from the exposed layers; a sounder material may, perhaps, be obtained lower down.

A little northwest of this is Baker and Conly's quarry, near Beaver Dam creek. This quarry is well opened, presenting a perpendicular face of fifteen feet or upwards; four and a half to five feet in this quarry, as far as opened, is tolerably good marble, (see specimen No. 8;) but the upper beds are of inferior quality, being contaminated by a thin interlamination of mica in the interstices of the stratification.

Nests of sulphuret of iron also occur here, which would render necessary a very careful selection. There are, at present, in this quarry several blocks that would fill a room of ordinary size.

Between this quarry and Chisilla Owen's quarry, on Beaver Dam creek, and about two hundred to three hundred yards from the last described, Mr. Baker has quarried out a considerable quantity of white marble of very superior quality. Unfortunately, the ledges of rock here are but little above the level of Beaver Dam; it is said, however, that when this quarry was worked, it was easily kept drained by a one-horse pump. The fact of good marble occurring at this low level on Beaver Dam, renders

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it more than probable that good marble will be found in the adjacent quarries just mentioned at a considerable lower level than where they are now worked.

On the northwest branch of Beaver Dam, between fifteen and sixteen miles from Baltimore, and rather more than a mile from the railroad, are Mr. Worthington's marble quarries, and saw-mill for cutting it into dimension stone.

The rock in this vicinity is mostly composed of small aggregated crystals, of less size and finer texture than the "alum-marble."

The old quarry was first visited. It is situated on a hillside, fifteen feet, by the barometer, above the drainage level of the northwest branch of Beaver Dam. The top rock here is not pure, nor even bedded; but beneath, at the above level, commences a marble of snowy whiteness, passing into one with a blue tinge; see specimens 10*w* and 10*bl*. This marble spauls with ease and precision, nearly as well on the edge as the bed, and is free to work in every way. This is also the case with the marble taken from Baker's lower quarry; and indeed all the finer marbles have the same property, unless they are laminated and schistose. The marble here admits of being split out of considerable length, twenty or even forty feet. The face, however, when thus split, is more or less irregular, varying four to six inches or more from a true level surface.

On the other hand, the facility of spauling enables it to be brought to the desired dimensions with comparatively little labor. The blue-tinged variety quarried here is but little inferior in appearance to the virgin white. Both varieties, though they do not admit of receiving a high polish, like the best quality of Carrara marble, can nevertheless be wrought into very fine ornamental work, with a beautifully sharp arris, as may be seen by the specimen with raised lettering, and that cut into a capital carved by Mr. Parkie, of Baltimore.

The lower beds are not exposed on the quarry face, but outcropping ledges can be seen in various places around the slopes of the rising ground; also in the bed of the creek, and everywhere in the bottom, where ditches have been dug two or three feet deep; all indicating that a region of country of three quarters of a mile square is underlaid by rock of similar character.

Mr. Worthington has opened a new quarry on a hill about half a mile southwest, and by barometrical measurement 40.8 feet above the level of the northwest branch of Beaver Dam creek, at the stone saw-mill. This quarry is about three quarters of a mile on the east side of the railroad. The upper masses are alone at present exposed.

They are rather more disposed to crumble than the best quality of the old quarry rock, but it is far superior to the upper beds at that locality, and there is every reason to believe that the best quality of rock is not yet reached; indeed, probe-holes have been already sunk three feet into the floor of the present quarry, which show that there are solid ledges of white marble of the same texture beneath.

The hill on which the new quarry is situated is estimated, at the lowest calculation, two hundred yards square; and it may be excavated for twenty-five feet in depth without being incommoded with water.

Within the last five years, at least twenty-five thousand cubic feet of dimension stone have been taken out of these two quarries.

An experienced stonecutter of Baltimore, who has worked a great deal of fine-grained marble, thinks there may be some difficulty in procuring dimension-stone of that quality of greater thickness than twenty inches. The same individual is of opinion that Baker's lower quarry might furnish a material of uniform color, of greater thickness. He has worked both the fine and the coarse crystallized marbles of Baltimore county; and his experience is, that the fine-grained marble dulls the tool more than the "alum stone," and is more difficult to saw, because, as he expressed it, the fine-grained rock contains most flint. He is, moreover, of opinion that the fine-grained is rather more apt to stain. There is a difference of opinion, however, on these matters. An accurate chemical analysis would throw light on this subject. There is also a difference of opinion as to the presence and proportion of magnesia in the different samples of these rocks. Some contend that the coarse crystalline marbles contain most magnesia, and that none of these Baltimore marbles have less than five per cent. of that alkaline earth. These are points which can be alone settled by minute chemical researches. Such analysis would also throw much light on their comparative durability; since, in the opinion of recent writers on this subject, the greater the proportion of *accidental* magnesia, the more liable the rock is to disintegrate until it reaches a quantity equivalent in proportion to the lime, and then unites with it to form a true dolomite or magnesian limestone; a very durable building material, and the same which was selected, after careful research, for the exterior of the new Houses of Parliament in England.

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As already remarked, iron pyrites (bi-sulphuret of iron) occurs occasionally in these marbles, in nests, both at Worthington's and Baker's quarries; see specimen 10 *p*. This mineral is much prone to undergo chemical changes by the action of the oxygen of the atmosphere; the sulphur passes into the state of sulphuric acid, the iron into oxide of iron, forming copperas or bi-sulphate of iron, a salt easily soluble in water, which is gradually removed; leaving, of course, a cavity in which water may lodge and freeze, whilst at the same time the oxidation of the iron spreads a disagreeable ferruginous yellow stain around the spot. For this reason great care should be taken, in selecting marble, to reject all masses contaminated with this mineral.

The only locality in the neighborhood of Worthington's quarries where a marble of the structure of the "alum stone" was observed, is in the immediate vicinity of his dwelling house; here, for a short distance, a white marble of that texture occupies the surface. Three hundred to four hundred yards beyond, on Prospect Hill, at a height of two hundred and twenty-one feet above the bed of the northwest branch of Beaver Dam creek, a highly ferruginous mica slate, charged with garnets, reaches the surface: this seems to be the boundary of that formation on the east. This garnetiferous micaceous schist may possibly serve to define the limits of the white marble formations, and may, perhaps, be the means of detecting these metamorphic marbles elsewhere.

One mile north of Texas, close to the railroad, is a quarry owned by Chisilla Owens, and now worked by Mr. Cooper. The rock here is well bedded, and may be quarried with ease; but the beds are, for the most part, thin, and there is an interlamination of mica. Here the dip is to the northeast, in an opposite direction from what it is in the Texas quarries. There is a bed of white crystalline marble ("alum stone") in this quarry, of about two to two and a half feet thick; whether it extends of uniform appearance and thickness through the hill, is not clearly seen in the present state of the quarries. The blocks lying in the quarry are of very regular dimensions, and the surface comparatively even, but they are not large, and many of the beds are interlaminated with mica; see specimen No. 11.

In the vicinity of Texas is a quarry owned by Judge Nesbitt, which has afforded some good white marble of a rather finer grain than that of most of the quarries in this vicinity; see specimen No. 12. I had not an opportunity of examining this quarry in person.

South of Fell and Robinson's quarry at Texas, on land owned by Mr. Cockey, there is some fine, white, close-grained crystalline marble. It lies, however, low—not more than eight or ten feet above the bed of Cold Stream creek. The quarry is not open, so that one cannot judge of the bed. Mr. Cockey says the same kind of rock has been found half a mile west. This is the only proof of its being extensive.

On the whole, it appears that there is a region of country extending for about two miles from north to south, and three-quarters to a mile from east to west, occupied by this marble, extending from the level of the water courses to forty to forty-five feet above the same, and constituting the whole of the hills within this tract of country; not all of the purest white, but varying from a snow-white to a light blue. It may be estimated that about one-third is of tolerable purity, and either of the crystalline texture or of the fine-grained crystalline structure, approaching in quality to the Carrara.

Nor can this be considered the limit of the formation. Scott's quarry, five miles beyond these, in the vicinity of the railroad, supplied a portion of the material for the Washington monument at Baltimore, and other quarries of white marble were pointed out to me from Prospect Hill, several miles off.

It cannot be doubted that these quarries are capable of supplying an unlimited amount of fine building material, either of the fine-grained marble or of the "alum stone." Whether the former could be obtained for the entire Smithsonian building, of a uniform color, free from gray spots and veins, is less certain; though Worthington confidently asserts, if he be permitted to supply white and faint blue indiscriminately, similar to specimens Nos. 10 *w* and 10 *bl*, he can furnish far more than the building requires, without blemish.

From all I have seen and heard, I incline to believe that the fine-grained marble will be somewhat more expensive to cut than the "alum stone;" but, on the other hand, if the ornaments have bold projections, and much undercutting, the coarser "alum stone" is unsuitable; it chips off more readily, and is less tough than the finer-grained varieties.

The "alum stone," as far as I can learn, works much like the Westchester marble; and if in the latter all the necessary Norman ornaments can be cut, so can they also, most probably, in the former.

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After the inspection of the Baltimore marble quarries, I proceeded, according to instructions, to the Point of Rocks, to examine Mr. McGlauchren's quarries.

I found them situated on Hook's run, two and a half to three miles west of the Point of Rocks, or about seventy-three miles from Baltimore, embraced in highly disturbed, contorted, and deranged chloritic and talcose schists, and distant only about three miles from the brecciated Potomac marble formation.

Nothing but hand specimens, and a few surface rock for making lime, have been as yet procured here, so that there is but little opportunity of judging the extent of the formation. The surface indications are not favorable, neither as regards uniformity of texture and composition, nor yet extent of beds.

The chloritic schists dip here at a high angle to the south. The out-crop of the white calcareous rock in question lies at the base of a hill on Hook's run, about twenty to twenty-five feet high, and pitches at an angle of some forty-five degrees into the base of the hill, which is here on a level with the bed of Hook's run, at the same time inclining to the west, so that it is inaccessible except at great expense of labor.

There is a somewhat better exposure of the Hook's run marble at a little higher level, on a hill a few hundred yards to the south; and here the best specimens were procured; see No. 15. Part of the ledge is composed of white calcareous layers, which are said to be susceptible of a polish. The rock at both places has a ragged, irregular, and uneven fracture, and is so interspersed with white and green talc, that it cannot be considered of much value as a building-material. It is possible that beneath this a purer and better rock might be reached; but the surface indications do not even favor that conclusion. Unless the bed should be brought to the surface by an upward turn of the contorted strata on the south side of this range of hills, there is no possibility of getting at it. Mr. McGlauchren intends to try, if possible, to open a quarry, with a view to ascertain more satisfactorily the extent and quality of this material.

On the whole, in its present situation, this marble seems worthless for the present purpose.

During the examination of structures and monuments of Baltimore marble, both in Green Mount cemetery and in the city of Baltimore, with a view to ascertain the durability and facility of working this material, I was so much struck with the beauty of some of the granite vaults and fronts of buildings that I determined to visit the quarries from whence this material was procured, more especially as the owner, Mr. Green, informed me that he was confident he could furnish it at a cheaper rate than the white marble could possibly be supplied, and as it was only two miles out of my way in returning from the Point of Rocks.

Accordingly, I stopped at Wookstock, 16 miles beyond the Relay House, and inspected carefully the Waterville branch and the Fox rock quarries in this vicinity; both of which are well opened, and afford a good opportunity of judging the quality and extent of this formation.

For about a mile square at this locality is an outburst of quartzose granite of magnificent quality, both as regards beauty of appearance, compactness of structure, and uniformity of color, texture, and composition. I have never seen anything superior in this country; indeed, I doubt whether it can be excelled in any country. The proportion of feldspar and mica is very small. The former is only in minute specks, the latter is small black scales, whilst the great bulk of the rock is a vitreous quartz.

In consequence of the mica being only in small regular disseminated flakes, it imparts to the rock an agreeable light gray, well adapted, in my judgment, to the Norman style of architecture.

In consequence of the composition and texture of this granite, it must possess a durability not to be surpassed by any building-material. For the same reason, it must be difficult and expensive to cut; but in consequence of the precision with which it splits, not only in the lines of cleavage, but even across the grain, it may possibly be furnished in competition with marble.

To give some idea of the remarkable facility with which the granite in question cleaves, I may state the following facts, which came under my observation: A slab twenty feet long and one foot square was split longitudinally into two, nearly as accurately as if it had been sawed.

Again, I observed two slabs—one measuring thirteen feet long, four feet six inches broad, and two feet thick; the other eleven feet long, six feet broad, and two feet thick—which were split in two, so as to form slabs of the same dimensions in length and breadth, but only one foot thick; and so perfect were the faces of cleavage, that they did not deviate one inch from a true level surface.

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So confident are the quarrymen of the certainty of splitting this granite in any quired direction, when even of no greater thickness than nine inches or a foot, that ey will, for the sake of having weight and substance in the block to retain it in its sition while under the hammer and chisel, first dress the two outside faces, and ust to splitting the slab or block in two.

Fully to appreciate the quality of this granite, the quarries themselves must be sited, and the huge block in mass inspected as they are removed from their original d. There, one may see a perpendicular face of nineteen feet presented to view, tending twenty, thirty, and even forty or fifty feet, without a seam or flaw, or the ightest variation in hue. A mass of forty or fifty tons weight may often be seen vered from the parent rock, by the simple but efficient means of small iron wedges.

On some slabs, by close inspection with the magnifying glass, a few minute specks f iron pyrites may be seen; but none were observed visible to the naked eye.

Mr. Green thinks nearly one-third of the freight may be saved by bringing the ck to its proper dimensions at the quarry.

This granite does not spaul freely; but, in consequence of the facility with which splits, but little spauling is required.

From the bottom of the Waterville branch quarry to the summit of the outburst forty feet, by barometrical measurement.

The Fox rock quarry is thirty-six feet from top to bottom, where now excavated. t might be worked some fifteen or twenty feet lower before being incommoded by ater. Mortar adheres with such force to this granite, that, when fairly set, it quires as much force to separate the substance of the granite as to detach the mor- ar from the face.

On the whole, the inspection of these granite quarries has impressed me with the elief that no locality can furnish a superior quality of granite, and that it cannot be rpassed for strength and durability by any building material in the world.

The stonecutters' bill in granite will, I fear, run up very high on account of its reat hardness; but, if the expense be not an objection, I do not think that there rill be any practical difficulty in rendering in granite ornamental work so little elab- rate as that of the Norman style.

An objection to the use of granite for the Smithsonian building deserves serious onsideration. It is, that, in this material, the effect of light and shade is, in a great neasure, lost; while every projecting ornament in marble is marked by a dis- inct shadow. How far this may injure the general effect under the plan adopted, he committee will judge. Results of considerable practical importance may be btained by an accurate chemical analysis, chiefly with reference to the proportion of ilica, alumina, magnesia, and iron, affecting the durability, discoloration, and ex- ense of working. Time, however, did not permit this investigation.

All of which is respectfully submitted.

DAVID DALE OWEN.

WASHINGTON, *March* 11, 1847.

List of Specimens referred to in the foregoing Report.

No. 1 Robinson and Fell's quarry.
1*a* Robinson and Fell's lower layer, close to Cold Spring creek.
2 Griscom and Burrough's quarry.
2*a* Griscom and Burrough's top layer, banded with light gray.
2*ab* Griscom and Burrough's fine grained, in nests.
3 Symington's quarry, large crystalled marble.
3*a* Symington's quarry, sample of large blocks.
4 Fell and Robinson's quarry, blue variety.
5 Mrs. Taylor's quarry.
5*a* Mrs. Taylor's quarry, crumbling layer.
5*b* Mrs. Taylor's quarry, (see specimen with dark color on long exposed surface.)
5*c* Mrs. Taylor's quarry, banded with gray stripes.
5*d* Chisilla Owen's quarry, fissured.
6 Chisilla Owen's quarry.
7 Worthington's (old) quarry.
8 Baker and Conly's quarry.
10 Worthington's (new) quarry.
10*w* Worthington's white variety.
10*bl* Worthington's blue variety.
11 Cooper's quarry, with veins of mica.

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No. 12 Judge Nesbitt's quarry.
13 Cockey's quarry, compact white.
14 Mica slate, with garnets.
15 Point of Rocks quarry, Mr. McGlauchren's.
16 Chloritic schist, Point of Rocks.
17 Granite, Waterville branch quarry, near Woodstock.
17*a* Granite, Fox rock quarry, near Woodstock.
18 Granite, Fox rock quarry, near Woodstock.

Laid on the table.

On motion of Mr. Seaton, it was—

Resolved, That Dr. Owen be requested to analyze the specimens of white marble, especially Mr. Worthington's and Mr. Symington's, and report thereon.

The chairman laid before the committee letters recommending Mr. Richard C. Murray as superintendent.

Laid on the table.

The chairman laid before the committee a letter from Mr. John C. Rives, recommending Mr. Jones, of Washington city, as bricklayer.

Laid on the table.

The chairman laid before the committee a letter from Mr. Isaiah Lukens, of Philadelphia, relative to a town clock.

Laid on the table.

And, on motion, the committee adjourned.

Sixth Meeting, March 13, 1847.

Present, Messrs. Seaton, Owen, and Hough.

On motion of the chairman, it was—

Resolved, That Mr. Peter Gorman be requested to procure, from Bull Run quarry, four perch of light gray freestone, to be delivered on the canal, opposite Eighth street, and be put up under the supervision of the architect—one-half in broken rubble masonry, the other in range work—finished exactly in the manner in which the said architect recommends; that the above styles, if adopted, should respectively be finished, so as to supply a sample wall, to which, if the above material be adopted, reference may be had in the contract.

Mr. Seaton submitted a letter from I. Mudd, offering his services as superintendent; also, a letter from A. B. McFarland, regarding the specimen walls and Seneca freestone; also, from the same, a draught of the quarries in the vicinity of Seneca creek; also, from the mayor of Baltimore, and Mr. Long, architect, of that city, recommending Mr. Richard C. Murray, as superintendent;* also, from Mr. M. W. Carter, of Fredericksburg, recommending Seneca freestone, and offering his services; also from Mr. John T. Bryant, recommending to purchase one of Mr. Lukens's clocks, Philadelphia; which letters, on motion, were laid on the table.

And, on motion, the committee adjourned.

Seventh Meeting, March 15, 1847.

Present, Messrs. Seaton, Hough, and Owen.

Mr. Seaton submitted a letter from Robert Barnard, offering his services as treasurer and accountant.

Laid on the table.

The chairman submitted a letter from Governor Francis Thomas, of Maryland, asking an additional examination of the quarry at Point of Rocks, heretofore examined by Dr. Owen.

Laid on the table.

The chairman submitted from Mr. Samuel Worthington the following offer to supply marble for the Smithsonian building:

BALTIMORE COUNTY, *March* 13, 1847.

GENTLEMEN: I will agree to furnish the necessary white marble for the erection of the above institution—say five thousand perch of rubble stone of the size of good

* NOTE.—March 16, letters and application withdrawn.

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building stone, carefully broken, and placed upon the cars at Cockeysville—at the rate of one dollar and eighty-seven cents per perch of twenty-five feet; or, at one dollar and twenty cents per ton, as weighed by the railroad.

I will agree, also, to furnish the dimension stone in the block, and no block to contain less than two cubic feet, at the rate of sixty cents per cubic foot, and placed on the cars at the above-mentioned place; or, by the ton, at six dollars per ton, as taken from the quarry; if the stone should be wrought at the quarry, and the carved work completed there, then an addition of fifty cents per ton will be charged on all stone so worked, to be delivered say in the course of three years, or as may be required.

Very respectfully, your obedient servant,

SAM'L WORTHINGTON.

Messrs. ROBERT DALE OWEN, and others,
Building Committee, Smithsonian Institution.

Mr. Hough, from the sub-committee to whom were referred the specifications of the architect, (James Renwick, Jr.,) for the building for said Institution, made the following report:

To the Building Committee of the Smithsonian Institution.

GENTLEMEN: I have carefully examined the specifications of the architect, (James Renwick, Jr., Esq.,) for the building of said Institution, and find them elaborately and minutely drawn, both in reference to detail of the work and permanence and durability of the structure. Few, if any, omissions can be discovered, and but few alterations seem to be required for the permanence and durability of the edifice, or for its better security against destruction by fire.

It has been suggested by one of the committee, that the width and depth of the foundation trenches, and, as a consequence, the foundation walls, might with safety be diminished, the inverted arches and the concrete foundations be entirely dispensed with, and consequently with a considerable saving of expense.

In such a conclusion I cannot, without further information, concur.

Whether its foundation trenches may or may not be diminished in depth, will, in in my opinion, depend upon the peculiar formation or strata of the earth, which can only be determined by making the necessary borings or excavations.

If, upon experiment, the strata shall be found to consist of firm indurated clay or gravel of sufficient depth for permanence, the depth may be diminished; otherwise, not.

But in no event could I recommend a diminution of width; nor would I dispense with either the inverted arches or the concrete foundation; deeming both very essential in preventing an unequal settlement and cracking of the walls of the edifice. I consider the concrete much better adapted to permanence of foundation than any ordinary structure of rock alone, and in no respect more expensive; and, in so ponderous a structure, all architects and constructors of experience concur in recommending inverted arches to preserve a uniformity of settling between the openings and solids of the building. I would, however, recommend a reservation in the contract for the construction of the building, of the right to diminish the depth of the foundations, with a pro rata reduction of price, in case the strata or character of the earth shall be found to admit of it in the opinion of the architect. It may be found, also, that the thickness of the walls of some of the towers, and perhaps the walls of the buildings throughout, may with safety be diminished; and I would recommend a like reservation in the contract to meet this contingency also.

The idea of constructing the principal stairs in such an edifice with wood, does not, in my estimation, well comport with public opinion, either as to permanence, durability, and appearance, or with the character of the age in which the edifice is to be erected.

I recommend, therefore, without hesitation, if the funds will possibly admit of it, that the principal stairs of both the north and south central entrances to the principal building be constructed of stone, as high, at least, as the museum floor.

I also recommend that the wood tesselated floor of the museum be dispensed with, and that, instead thereof, there be a single floor of 1¼-inch yellow pine plank, with the intention of covering it with stone or composition flagging at a future day; or, what I would deem preferable, dispense with the wood floor altogether at first, and raise the deafening above so as to cover the floor-beams, upon which lay a floor of stone flagging. This it is believed may be done at a small expense over the wood Mosaic, be greatly more secure against fire, and require much less expense in cleaning and repairs.

I would also recommend as a security against fire in case of the burning of the

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roof, that a rough floor be laid upon the beams above the upper ceiling, next to the roof, throughout the building, and covered with a suitable thickness of lime-water cement; over which, when dried, a covering of common salt, or a cement of salt and ashes, be evenly spread, carefully filling all the cracks or crevices of the cement.

This is the French method of fire-proofing the upper part of buildings, and has been to some extent adopted in some sections of this country with entire success. This would be attended with comparatively little expense, and would, it is believed, render the body of the building entirely secure against destruction by fire in case the roof should be burnt.

All of which is respectfully submitted,

WM. J. HOUGH.

WASHINGTON, *March* 15, 1847.

On motion of Mr. Seaton, it was—

Resolved, That Mr. Hough be requested to examine into the expediency of dispensing with any portion of ornamental stucco in the building.

The chairman submitted from Dr. Owen the following report on the sand-stones of the Potomac:

After completing the report of the white marbles and granite of Baltimore county, Maryland, I proceeded, according to instructions, on the afternoon of the 11th of March, to inspect the quarries of sand-stone in the neighborhood of Seneca creek, Montgomery county, Maryland.

About 21½ miles from Washington city, on the line of the Chesapeake and Ohio canal, the talcose and chloritic schists of the Great Falls of the Potomac are succeeded by freestone and marly beds of the new red sandstone formation. These deposits are of various colors, from a light, greenish-gray, or dove-color, to a deep red or brown.

The first quarry visited is situated on Bull Run, 23 miles from Washington. The excavations have hitherto been carried on from 250 to 300 yards on the north side of the canal; but the ledges of rock extend down to its margin, and can be quarried with nearly as much facility a few paces from the canal as where operations are now carried on.

The dip of the stratification slopes at an angle of 15° or 20° upwards from Bull Run. The beds, suitable, both as regards color, durability, and ease with which they can be cut, are fortunately near the surface in the ravine of Bull Run. By commencing quarrying operations near the bed of this stream, and working up the western slope, blocks of large dimensions can be obtained with comparatively little labor. The beds which have been chiefly worked here are layers of a deep red color, (see specimen No. 18,) and layers of a purplish-gray, (No. 19,) which, by exposure, acquire a lighter and more pinky hue. The latter is the rock most suitable for building purposes, its color being agreeable, and, in the opinion of men of good judgment and taste, appropriate for the Norman style of architecture. This rock possesses one property in particular which recommends it to the attention of builders. When first removed from the parent bed, it is comparatively soft, working freely before the chisel and hammer, and can even be cut with a knife; by exposure, it gradually indurates, and ultimately acquires a toughness and consistency that not only enables it to resist atmospheric vicissitudes, but even the most severe mechanical wear and tear. Abundant evidence of this is afforded in the buildings of the neighborhood, in several of the locks and aqueducts, and also in ledges and blocks exposed in the bed of Bull Run. The deep red varieties have been chiefly used in these structures. By close inspection of slabs exposed now twenty years to atmospheric agencies and severe mechanical friction, the mark of the dressing chisel is still sharply imprinted in the surface. On the perpendicular wall of the aqueduct, where the water has been oozing through the joints and trickling down its face, forming an incrustation of carbonate of lime, one may observe, where this calcareous crust has scaled off, the grooves and ridges of the surface still nearly as distinct as when the block first came from the hand of the stone-cutter.

The angles and edges of the keystones of the arch, placed under these most unfavorable circumstances, are sharp and entire. Only one or two blocks of this work of 20 years' standing show signs of decay; but these seem to be such as either have not been well selected, or have been placed on the edge in the wall.

Even the tow-path of this aqueduct, over which the horses and mules have been travelling for 20 years, is still unimpaired. Even the corners around which the heavy lock-gates swing, show no signs of chipping. Blocks were pointed out to me in the bed of Bull run, which had been rejected by the engineers as being of too soft

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and perishable a nature, and which have been exposed for 20 years to the action of running water and alternate thawing and freezing, which exhibit little or no alteration, except that they have become so indurated that they turn the edge of the chisel, and are a little dingy on the surface.

Mr. Peter, on whose property this quarry is situated, has built a fine barn of these freestones. He assures me that there are stones in that barn 50 years old, which have been in three buildings. On one corner-stone, where the figures "1824" had been cut in that year *by the point of a penknife*, the rock now is so hard that it would soon turn the edge of a well-tempered tool.

Interstratified with these grit-stones are some argillaceous, marly-looking beds, (No. 20,) especially prevalent towards the upper outcrop of the stratified mass constituting these hills. These layers are, of course, entirely unfit for any kind of building purposes. The sandstone beds differ very much, not only in color, but also in hardness and texture. Some are fine-grained, and can be wrought to a sharp arris; others are coarse-grained, and even assume the character of a conglomerate; these latter, of course, are entirely unfit for the finer purposes of architecture. Amongst a series varying so much, not only in color, but in texture and composition, a careful selection becomes a matter of the utmost importance.

About a quarter of a mile further west, in a bold escarpment of 20 or 30 feet in height, close to the margin of the canal, is the "College quarry." Here the strata assume a somewhat different character. Above, they are of a crumbling, argillaceous, marly nature, producing a retentive soil, well adapted for the growth of wheat and corn; beneath these disintegrating beds are red and rather argillaceous freestones of and inferior quality, which pass downwards into light greenish-gray beds, varying from a foot to two or two and a half feet in thickness.

At about fifteen feet from the top is the most important bed exposed in the quarry, of a greenish-gray hue, usually called the "dove-colored bed;" see specimen No. 21. Beneath this, as far as can be ascertained from the rubbish strewed over the lower face of the quarry, are brown and bluish-purple beds, (No. 22,) of inferior quality. Here, as at Bull run, the strata dip to the west at an angle of about 15° or 20°; so that the middle layers crop out towards the summit of the hill. Near the top the dove-colored bed is two feet thick. Sixty feet down the slope of dip it has increased to four feet; forty-five feet more, it is six feet; and fifty-four feet more, it is nine feet thick. At the same rate of increase to the west, beyond where it is exposed to near the level of the canal, it would be twelve to thirteen feet. The color of this bed is rather cold, but it is much admired by some persons. It is faintly striped parallel to the stratification, (see 21*a*); it has also some small faint spots, or "pock," as the stone-masons call it, (see 21*a*), not quite so hard as the body of the rock. This stratum is not near so easily worked as the best beds in Bull run quarry; indeed it is harder to work than marble. If this dove-colored bed is worked extensively, there will be considerable expense incurred in stripping, since there are fifteen feet of solid strata overlaying it.

A few hundred yards west of this is another quarry, equally bold, and composed of similar beds, their tints being for the most part gray, greenish-gray, and dove-colored.

Beyond this, along the canal, the ground is flat and wet, and the hills recede towards the north, so that to the west of the last described quarry, for fifteen or twenty miles, building-material cannot be procured so convenient to navigation.

Between the College quarry and Bull run there are several localities close to the canal, where some rock has been quarried. The beds exposed are of warm red tints, similar to the red sandstones in Bull run. At these quarries, and in Bull run, the material for the construction of the aqueduct and locks in this part of the Ohio and Chesapeake canal were obtained. These works have stood the test of time as well, if not better, than any of the other structures along the whole line of this improvement.

The investigations in the vicinity of Seneca creek prove conclusively that the bluffs on the banks of the canals, for about three-quarters of a mile, afford abundance of freestone for building purposes, equal and even superior to those which are obtained in the quarries of New Jersey, which supply the New York market.

If this freestone should ultimately become the choice of the Building Committee of the Smithsonian Institution, a very careful selection will be necessary not only as regards the particular color preferred, but that it be those softer varieties of pure grit stone, free from all argillaceous or marly admixture, and containing none of those "pock" marks, or small spots and cavities, which not only injure its appearance, but detract from its otherwise durable nature. They must also, to insure durability, be in all cases laid on the bed as in the natural position in the quarry.

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The singular property which the best quality of these freestones possesses, of hardening by exposure, is one of its most valuable characteristics; permitting it to be wrought at less expense than marble, and imparting to it a durability which increases with age. It has been a question, whether this property is due to iron in its composition, passing from a lower to a higher degree of oxidation, or to the presence of a sub-carbonate of lime, becoming gradually by exposure a carbonate of lime, and acting as a cement to the particles of silex. A minute chemical analysis would, no doubt, throw light on this matter. It might prove that this phenomenon depends on some other property not yet suggested.

This same property of hardening, by exposure, is possessed in a remarkable degree by a building stone which has been excavated for centuries from St. Peter's Mountain, in the vicinity of Maestrich, in Belgium, and which is the terminating member of the cretaceous formation of the Mesozoic period. This rock is a calcareous freestone, and is generally supposed to owe its hardening property to a chemical change which takes place in the calcareous cement. The Seneca freestone, however, does not effervesce in mass with acid; and this fact militates against the idea of its indurating property being due to any peculiar form of carbonate of lime.

In concluding this report, it may not be out of place briefly to advert to two letters which I addressed from Indiana, under date the 22d and 25th of October last, to one of your commitee, (the Hon. Wm. J. Hough,) on the subject of the sandstones of the Potomac, which, at that time, I had not seen. In these letters, (judging from the fact shown from a geological map in my possession, that the red sandstone formation which furnishes highly-prized building material in New Jersey and Pennsylvania passes thence to the southward, and crosses the Potomac at Noland's Ferry, descending that river on the Maryland side and crossing Monocacy and Seneca creeks,) I took the liberty of suggesting the importance of a careful examination of these localities, before selection was made of a more distant and expensive building material. Mr. Hough will recollect that the second of these letters contains the following paragraph:

"It seems indeed strange, that, if really good and durable freestones are to be had on the canal or river above Washington, these should not already have been used for the public edifices there; but sufficient examples are to be found of the very best building material, having been overlooked through a long series of years, even in the vicinity of populous cities, for lack of minute and discriminating examination. My own firm belief is, that a durable sandstone, equal or nearly equal to that used in Trinity church, can be discovered in sufficient quantities in the vicinity of the Potomac or the canal."

It may afford some evidence of the confidence with which geological science may be appealed to in search of practical results, that an actual examination of one of the localities above designated has fully confirmed all, and more than all, I had anticipated, concerning the material they furnish.

I annex a rough sketch of the College and Bull Run quarries, showing the dip of the strata and the shape of the escarpments along the bank of the canal, where the freestone is found.

All which is respectfully submitted.

DAVID DALE OWEN.

WASHINGTON, *March* 15, 1847.

List of Specimens referred to in the foregoing Report.

18. Red Potomac sandstone, Bull Run, near Seneca creek, Montgomery county, Maryland.
19. Grayish-purple or pink variety of sandstone, Bull Run, hear Seneca creek, Montgomery county, Maryland.
20. Disintegrating argillaceous beds, College quarry, west of Bull Run, Montgomery county, Maryland.
21. Dove-colored bed, College quarry, west of Bull Run, Montgomery county, Maryland.

21*a*. Banded variety of 21.

22. Purple and brown beds, No. 21, College quarry, west of Bull Run, Montgomery county, Maryland.

And, on motion, the committee adjourned.

Eighth Meeting, March 16, 1847.

Present, Messrs. Seaton, Hough, and Owen.

The chairman laid before the committee the following letter:

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WASHINGTON, *March* 15, 1847.

The subscriber will furnish all the stone necessary for the cutting for the Smithsonian Institution, upon the dock at Washington, for the following prices:

For East Chester marble, such as the Post Office Department is built of, for the sum of 75 cents per cubic foot.

Mount Pleasant or Sing Sing marble, from the Mount Pleasant prison, for the sum of 55 cents per cubic foot.

JAMES HALL,
Westchester county, New York.

Hon. ROBERT DALE OWEN.
WM. J. HOUGH.
W. W. SEATON.

P. S.—I will name Horace Butler and James Foster, both of the city of New York, as security for the faithful performanee of the above.

JAMES HALL.

The chairman laid before the committee the following letter:

BALTIMORE, *March* 15, 1847.

We, the undersigned, do hereby agree to deliver to the committee of said Institution white crystallized marble for rubble work, on the cars at the quarry, in pieces weighing from 75 to 3,000 lbs. each, at $2.20 for 3,000 lbs.; it being considered equal to one perch of stone.

If the range work should be adopted, we will agree to deliver the stone, as per specification of 8 in bed, at the building in Washington, at 50 cents per superficial foot.

We will also agree to furnish the dimension stone, delivered at the building in Washington, at 53 cents per cubic foot for stone not exceeding 1,000 lbs. in weight; from 1,000 to 2,000 lbs., 57 cents; from 2,000 to 3,000 lbs., 65 cents; and from 3,000 to 4,000 lbs., 72 cents per cubic foot.

We name M. S. and J. T. for our security.

Respectfully, GRISCOM & BORROUGH.

To the BUILDING COMMITTEE OF THE SMITHSONIAN INSTITUTION.

P. S.—We should like to furnish the lime for the building, also, and would deliver it at a reasonable price.

G. & B.

The chairman laid before the committee the following letter:

BALTIMORE, *March* 15, 1847.

We will agree to deliver to the committee crystallized *marble in blocks*, for *rubble work*, weighing from 100 to 800 lbs. each, on the car at the quarry, at $2 for 3,000 lbs., this amount to be considered equal to a perch of *stone;* and should the *range work* be adopted, with 8 to 10-inch bed, then we will agree to deliver stone at 49 cents per superficial foot at the *building;* and for *dimension stone*, not exceeding 1,000 lbs., 50 cents per *cubic foot;* and from 1,000 to 2,000 lbs., 53 cents; 2,000 to 3,000 lbs., 55 cents; and all other stone, from 3,000 to 5,000 lbs., 60 cents. And we would also wish to contract for the lime, and name for our securities C. C. A. and J. S. S.

Very respectfully, FELL & ROBINSON.

To the COMMITTEE OF THE SMITHSONIAN INSTITUTION.

The chairman laid before the committee the following letter:

WASHINGTON, *March* 15, 1847.

I propose to sell to the Building Committee of the Smithsonian Institution the right to quarry such stone as they or their agent may select in my quarry, at the rate of 50 cents per perch. My quarry is situate immediately upon the Baltimore and Susquehanna Railroad.

The stone can be placed upon the cars from the quarry with very little labor. The distance from Baltimore per railroad is 15 miles.

E. J. COOPER,
79 South High Street, Baltimore.

The chairman laid before the committee the following letter:

BALTIMORE, *March* 15, 1847.

GENTLEMEN: We propose to furnish from the Fox Rock granite and Waterville

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quarries, in Baltimore county, stone for building the Smithsonian Institution, of the same color and quality as that used in the rear of the General Post Office, at the following prices:

The rough rubble stone, delivered at the depot in Washington city, at 16 cents per foot.

The dimension stone, for fine work, at 46 cents per cubic foot.

The split ashlar, in place of the rough rubble stone, we will furnish at 37½ cents per foot.

The above prices are estimated, provided the price of freight on the railroad is reduced to 2½ cents per ton per mile.

All of which is respectfully submitted.

SUMWALS, GREEN & CO.

Hon. ROBERT DALE OWEN,
WM. J. HOUGH,
W. W. SEATON,
} *Committee.*

The chairman laid before the committee the following letter:

WASHINGTON CITY, *March* 15, 1847.

GENTLEMEN: I propose to deliver what lime may be wanted in the erection and finishing of the Smithsonian Institution, in this city, at 40 cents per bushel.

The lime shall be burnt from the best alum stone, with wood, and shall be warranted of the first quality.

I will guaranty that two bushels and a peck shall be sufficient for laying a thousand brick, provided proper sand is used.

E. J. COOPER,
79 South High Street, Baltimore.

The chairman laid before the committee the following letter:

WASHINGTON CITY, *March* 15, 1847.

The undersigned proposes to furnish the white pine and yellow pine necessary for the Smithsonian Institution at the following prices:

200,000 b. m. white pine timber, at $23.
75,000 ¼ b. m. yellow pine narrow boards, in the rough, at $26.50.
75,000 ¼ b. m. ditto, dressed, tongued, and grooved, at $37.
25,000 b. m. white pine plank, at $30.
Common cullings, at $14.

The above to be delivered here free of charge, and in such quantities as may be ordered, from time to time.

JOHN PURDY.

The chairman laid before the committee the following letter:

MARCH 7, 1847.

SIR: I have seen, from the proposals for the construction of the Institution, that stone from the upper Potomac may be used in the building. I will take leave to inform you that I have quarries of the red sand-stone within a short distance of boat navigation, from which were constructed the aqueduct and locks at and below the mouth of Seneca. The quarry will either be sold, or otherwise, as may best suit the views of the parties. I shall be pleased to have a call before engagements be entered into, for the purpose of inspection.

Respectfully,
CHARLES VINSON,
Near Seneca Mills.

To the CONTRACTOR ON THE SMITHSONIAN INSTITUTION.

The chairman laid before the committee the following letter:

WASHINGTON, *March* 15, 1847.

GENTLEMEN: I will furnish bricks, lime, cement, and sand, and lay the same, for $14.75 per thousand. The materials shall be of the best quality, and the workmanship done in the best manner; and will give for securities for the performance of the same, John C. Rives and Wm. H. Gunnell, Esquires.

Yours, &c.,
ZEPHANIAH JONES.

To the BUILDING COMMITTEE OF THE SMITHSONIAN INSTITUTION.

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The chairman laid before the committee the following letter:

WASHINGTON CITY, *March* 15, 1847.

I hereby propose to furnish the material and lay one million bricks, according to plan and specification, for the sum of $11,500.

Yours, very respectfully, J. RAY.

The chairman laid before the committee the following letter:

WASHINGTON, *March* 15, 1847.

GENTLEMEN: The undersigned proposes to furnish and lay all the bricks that may be required about the Smithsonian Institution, to wit:

In the walls, per thousand, measured, $9.62½.

Or, per cubic foot, 14¼ cents.

All the bricks to be hard; lime of the best Potomac stone; sand clean and sharp.

If these amounts satisfy the honorable committee and the architect, then it is time, I hope, (in my opinion,) to furnish a security, or retain a percentage on a certain amount of money, for the faithful compliance with this bid.

Yours, with respect, THOMAS LEWIS.

To the BUILDING COMMITTEE OF THE SMITHSONIAN INSTITUTION.

The chairman laid before the committee the following letter:

WASHINGTON, *March* 15, 1847.

I propose to furnish one million of the best hard brick, for the Smithsonian Institution, at $4.93 per thousand. I propose to furnish the best hard brick for 175,000 cubic feet of backing, at $4.93 per thousand.

E. KINGMAN.

Hon. R. D. OWEN,
W. J. HOUGH,
W. W. SEATON,
Building Committee of the Smithsonian Institution.

I offer Messrs. Tyson and Brickley as my securities for the performance of the contract.

E. K.

The chairman laid before the committee the following letter:

Proposals to deliver to the Building Committee of the Smithsonian Institution, at the site of their building in Washington, white marble in the rubble, and in the range and cube form.

For every perch of 8,100 lbs., in such shape as will facilitate the preparation by the mason, and in sizes of 70 to 800 lbs., $4.60.

For range work, with split faces, bedded to make a joint not over half an inch, and roughly pitched off to a line in courses of 10 to 18 inches, per superficial foot, measured face only, 47 cents.

For marble in the cube form, quarried as near the size wanted as practicable, per cubic foot, (large crystal,) 50 cents.

Medium crystal from my quarry, 62½ cents.

Fine crystal from my Owens' quarry, in small blocks for foliage work, 70 cents.

My bondsmen are John W. Brown and Wm. Baily, Esquires, of Baltimore.

THOS. SYMINGTON.

WASHINGTON CITY, *March* 15, 1847.

The chairman laid before the committee the following letter:

Proposals by George Crest, of New Cumberland, Pennsylvania, by his agent, Thomas Symington, of Baltimore, to deliver in Washington city, for the building of the Smithsonian Institution, white pine sawed timber, viz:

For all white pine sawed timber, to dimension size, out of good sound logs, delivered in Washington city, on the landing, per 1,000 feet (board measure) $18.

[NOTE.—In case the freight from Havre de Grace is less than $3 per M., a corresponding reduction will be made. In all cases the Building Committee are required to pay the captains the freight from Havre de Grace to Washington city. The said freight will be as part payment for the lumber.]

Mr. Crist is proprietor of one of the largest saw-mills on the Susquehanna river. He is a responsible man, and has directed me to say that he will give the necessary bonds, either from his own neighborhood or from Baltimore.

He further states, that he would like to deliver the whole quantity during the ensu-

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ing season. If desirable a sample of this lumber can be seen at the United St... Arsenal, Greenleaf's Point, delivered there some two or three years ago.

THOS. SYMINGTON.

BALTIMORE, *March* 15, 1847.

The chairman laid before the committee the following letter:

Proposals to deliver to the Building Committee of the Smithsonian Institution, at t... site of their building in Washington city, white marble ashlar.

For ashlar with horizontal pointed face, as sample No. 3, in the basement of t... City Hall, 6 inches bed, per superficial foot, measured face only, 49 cents.

For ditto, averaging 8 inches bed, 63 cents.

For ditto, machine-dressed face, as sample No. 4, averaging 6 inches bed, 49 cen...

For ditto, averaging 8 inches bed, 63 cents.

For split ashlar, in range courses of 10 to 18 inches, from my Owens quarry, fro... whence sample No. 4 was procured, bedded, so as to make a joint not over half a... inch, average 6 inches bed per superficial foot, measured face only, 40 cents; and ... have a draught cut all round the edges on the face.

For ditto, as above, averaging 8 inches bed, per superficial foot, face only, 49 cen...

I name the following gentlemen as my bondsmen, viz: John W. Brown and Wi... liam Baily, Esqs., of Baltimore.

THOS. SYMINGTON.

WASHINGTON CITY, *March* 15, 1847.

The chairman laid before the committee the following letter:

Proposals for cutting marble for the buildings of the Smithsonian Institution, the ma... ble to be that which is procured from the large or medium crystal quarries near Ba... timore.

FOR CUTTING.

Steps, if square, worked fine, square droved or rubbed, per superficial foot, 35 cent...

If worked with the tooth chisel, (as sample No. 2, deposited in the sample-room... per superficial foot, 25 cents.

Measure length by girth; if the ends show, add thickness to length.

Water table, splayed, without members, fine cut or rubbed, per superficial foot, ... cents.

If tooth-chiseled, 30 cents.

If moulded, add ten cents per superficial foot lineal for each member; measu... length by girth from wall to wall.

Plain ashlar, fine cut or rubbed, per superficial foot, 35 cents.

Tooth-chiseled, 25 cents.

Measure face only.

Plinth and base course of all the door and window jambs and mullions:

Fine cut and rubbed, per superficial foot, $1.50.

Tooth-chiseled, $1.10.

Measure the height, of course, for the length; and for the girth, girt from wh... the course joins the ashlar in front, around the bases, to where the fine work ceases.

[NOTE.—If any foliage is to be cut upon any of the bases, an extra price will b... charged for the foliage; to be determined by the architect. The general rule to b... observed, in all such cases, will be to allow the contractor a fair percentage over th... operator's charge for the said work.]

Doors and window jambs, arches and mullions:

If plain splayed, fine cut, and rubbed, per superficial foot, 40 cents.

Tooth-chiseled, 30 cents.

Measured length, by girth from ashlar in front, to casing; for the circle or arch... add one-half measure.

If moulded with one or more rebats and columns, fine cut, or rubbed, per super... ficial foot, $1.10.

Tooth-chiseled, per superficial foot, 80 cents.

Measure the height of each course for the length; and for the girth, girt from th... ashlar in front around the mouldings to the casing in the rear; add for the arch ... half measure.

[NOTE.—If any of the members are to receive a cable cord, zig-zag, or oth...

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ice, which must be worked upon the member, after it shall have been finished, for price per lineal foot of such device apply rule No. 1.]

iage caps:

For engaged columns of five inches diameter and under, finely cut, and rubbed, each $4.
Rough cut, each $2.

NOTE.—The course on which they are cut will be measured, and charged as a tion of the door or window jamb.]

iage caps, moderately plain:

For disengaged columns of 5-inch diameter and under, finely cut, and rubbed, h $10.
Roughly cut, $6.
For disengaged columns of 12-inch and under, finely cut, and rubbed, each $35.
Roughly cut, each $20.

cular label mouldings over doors and windows:

If not over 12 inches girth, finely cut, per lineal foot, $1.10.
Tooth-chiseled, 80 cents.

NOTE.—The stones on which it is cut are measured and charged according to their s.]

iage drops, brackets, or modellions' buttresses, (apply rule No. 1:)

If finely cut, or rubbed, per superficial foot, 40 cents.
Tooth-chiseled, 30 cents.
Measured as ashlar.
Buttress caps, plain splayed, finely cut, per lineal foot, 40 cents.
Tooth-chiseled, 30 cents.
Moulded, per foot lineal, finely cut, etc., 80 cents.
Tooth-chiseled, 65 cents.
Measured along the eave.

NOTE.—The course on which the cap is cut is measured and charged according to lass.]

bel courses:

Such as the one that extends around three sides of the north front porch, which feet high. The upper course as plain ashlar; the lower course, measure face bed, and priced as ashlar.
For sinking the arches, each finely cut, $3.50.
Tooth-chiseled, $2.50.
For sinking arches of less size, in proportion.

el mould, with octagon front, over corbel courses:

Per superficial foot, finely cut, or rubbed, 45 cents.
Tooth-chiseled, 35 cents.
Measure length by girth of what shows.

ok label, or similar moulded courses:

Per superficial foot, finely cut, $1.10.
Tooth-chiseled, 80 cents.
Measured length by girth of what shows.

tlements over front porch, and all similar work:

Per superficial foot, finely cut, 35 cents.
Tooth-chiseled, 25 cents.
Measure as ashlar.

tlements, cap or coping, if plain or splayed:

Same as plain octagon label course.
If moulded, according to its class.

indow sills:

Splayed, per superficial foot, finely cut and rubbed, 45 cents.
Tooth-chiseled, 35 cents.

NOTE.—If part of the plinths of the window jambs or mullions are worked upon splay, or if a check is sunk in the splay, to receive the sill, for the plinth or check ly rule No. 1.]

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Circular Windows:

The arch jamb, the same as their class. For the mullions, caps, and plinth, the same as their class; for the centre piece and tracery, apply rule No. 1.

Interlaced arches, the columns, caps, &c.:

For the interlaced arching, apply rule No. 1.
For the columns, caps, and bases, measure and charge as their class.

Cornice or coping:

Octagonal face, finely cut and rubbed, per superficial foot, 40 cents.
Tooth-chiseled, 30 cents.
If moulded, according to its class.
Measure top bed and girth of face.

Finials: apply rule No. 1.

Corbel course, or central front tower, and all such:

Each course, according to its class.
For the band or paneled course, apply rule No. 1.

Sill course of semicircle and fillet, and five sides of octagon:

Finely cut and rubbed, per superficial foot, 80 cents.
Tooth-chiseled, 70 cents.
Measure length by girth of what shows.

Paneled arcade: apply rule No. 1.

Pinnacles on principal tower:

Finely cut and rubbed, each $240.68.
Tooth-chiseled, each $208.

Flagging:

Square marble tile, 2½ inches thick, and 12 to 24 inches square, of two colors, delivered at the building ready for laying, per superficial foot, 35 cents.

Marble tile:

1½ inch thick, and four to six inches of two or more colors, per superficial foot, delivered ready for laying, 50 cents.

1½ inch thick, and 11 to 12 inches square, delivered and ready for laying, per superficial foot 35 cents.

The aforegoing list of articles and prices will embrace all the kinds of cut marble work about the building. I will comply with the printed specifications, (subject to the foregoing rule,) and all requirements stated in the advertisements for proposals.

My bondsmen are John W. Brown and William Baily, Esquires, of Baltimore.

Dowels and clamp holes:

For every ¾-inch hole, sunk 3 inches, 2 cents.
For every 1-inch hole, sunk 3 inches, 3 cents.
If sunk more, in proportion.

THOS. SYMINGTON.

BALTMORE, *March* 13, 1847.

The chairman laid before the committee the following letter:

BALTIMORE, *March* 15, 1847.

GENTLEMEN: We propose to cut and dress all the fine work mouldings, &c., for the Smithsonian Institution, at ($3) three dollars per cubic foot. We will also build all the stone-masonry at $2 per perch, mason measurement, except the concrete under the foundations, which is not embraced in this proposal.

Respectfully submitted, SUMWALS, GREEN & CO.

Hon. ROBERT DALE OWEN,
WM. J. HOUGH,
W. W. SEATON,
} *Committee.*

The chairman laid before the committee the following letter:

WASHINGTON, *March* 15, 1847.

GENTLEMEN: I propose to build and construct the items of the Smithsonian Institution, herein contained, in a workmanlike manner, agreeably to the plans and specifications of the architect, for the following aggregate sum, viz: Digging foundations

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rete, rough stone in foundation below the superstructure, setting the rubble-fac- and cut stone work of all parts of the building, and back-filling the same; sess- s and flagging for the foundations of partition walls—furnishing all the materials, pt the rubble facing and cut stone—for the sum of thirty-six thousand two hun- l and fifty dollars.

NOTE.—The material for scaffolding, the brick and brick work, and the north room ging, are not included in the above. If I furnish the iron cramps, dowels, and ors, the price will be six cents per pound. In case range work is adopted instead he rubble facing, one thousand dollars will be deducted from the above.]

refer you to the following gentlemen: Charles B. Fisk, Esq., chief engineer on Chesapeake and Ohio canal; A. B. McFarlan, Esq., Robert Brown, and Andrew ll, Esq., of Washington city. I name for my bondsmen Mr. John Higham, of timore, and Andrew Small, Esq., of Washington city.

JAMES MACPHERSON.

o the BUILDING COMMITTEE OF THE SMITHSONIAN INSTITUTION.

he chairman laid before the committee the following letter:

WASHINGTON, *March* 15, 1847.

ENTLEMEN: I do hereby agree to furnish all the materials and perform the brick k of the building, according to the plan and specification agreed upon by the ents of the said Institution, for the sum of twenty thousand three hundred and dollars, ($20,350.)

r, I will furnish and lay one million of hard bricks for the sum of fifteen thou- d dollars, ($15,000.)

r, I will furnish all materials, provided all the outer walls are backed up with k in the place of rubble-stone, for the sum of thirteen dollars and forty cents per usand, ($18.40.)

GEORGE H. PLANT.

o the BUILDING COMMITTEE OF THE SMITHSONIAN INSTITUTION.

. S.—If my bid be accepted, I am prepared to give the security required.

G. H. P.

he chairman laid before the committee the following letter:

FREDERICK COUNTY, *March* 15, 1847.

he undersigned regrets very much that he did not see, until very recently, your posals for bids to furnish materials for the building of the Smithsonian Institu- n, because he has not now time to ascertain whether the Chesapeake and Ohio nal Company will consent to reduce the toll for transportation of marble on this nal.

Assuming that the tolls will not be reduced, he offers to furnish 110,000 feet of utiful white marble, for rubble facing, one foot thick, at 60 cents per foot; and ,000 cubic feet dimension stone, of white marble, for cutting, at 90 cents per foot; d will give as securities, for the faithful execution of such a contract, Sebastian msburg, John C. Osborn, John Hagan, and Joshua Dill, all of whom hold valua- real estate in, and are citizens and residents of, this county.

The undersigned is not certain whether it is expected that those who propose to rnish the materials for building above mentioned must also submit proposals for e construction of the Institution, and has, therefore, submitted proposals for mate- ls only. If it is the intention of the committee to have the materials furnished, d this building constructed under one and the same contract, he will undertake, if ne be afforded for this purpose, to form a company that will submit a proposition that character, at an early day, and on terms that must be esteemed desirable. his is said confidently, from his knowledge of the superior quality of the marble he oposes to furnish, and from the facility with which it can be delivered at Wash- gton.

Very respectfully, your obedient servant,

PHILIP McGAUGHEN,
Point of Rocks.

Hon. R. D. OWEN,
W. J. HOUGH,
W. W. SEATON,
} *Committee, Smithsonian Institution.*

All of which letters were laid on the table.

The committee, then, in the presence of the architect, James Renwick, Jr., and of e superintendent, Robert Mills, proceeded to open the bids, and found them as by e following table:

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Schedule of sealed proposals for the Smithsonian Institution, opened on the 16th day of March, 1847, by the Building Committee.

No.	Names.	Stonecutting.	Carpenter work.	Mason work.	Seneca rubble.	Seneca cut.	Marble rubble.	Marble cut.	Granite.	Furniture.
1	Charles L. Coltman				$278,000		$300,000	$318,000		
2	William H. Digges		$68,000		305,000					
3	Francis Mohun		88,000							$11,000
4	Joel Downer		51,300							
5	Bell, Packie & Co., (Ashlar ranged)	$119,600								
6	B. B. Curran		65,200				240,000			
7	Jos. Bryan		74,700							9,200
8	Jas. Strang			$81,000						
9	Butler, Adams & Cameron	79,500	144,000				228,500			
	Do. do. do.	106,508	129,000					235,000		
10	James Dixon & Co.				196,000					
11	Gilbert Cameron				200,000	$203,000				
12	T. M. Niven				220,000	221,500	227,000	230,500		
13	Jno. Sniffen		68,000							20,000
	Do. (tesselated floor)			1,500						
14	F. Gerard				214,000	219,500	225,000	230,500		

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As each of the foregoing bids was opened, it was labelled "Opened March 16, 1847," each of the building committee adding his initials.

As soon as all the bids were opened and their amounts compared, a letter was prepared and addressed to six of the bidders, to wit:

1. Messrs. James Dixon & Co.
2. Butler, Adams, and Cameron.
3. T. M. Niven.
4. Gilbert Cameron.
5. F. Gerard.
6. B. B. Curran.

The letter is as follows:

OFFICE SMITHSONIAN INSTITUTION, *March* 16, 1847.

SIR: Please to inform the Building Committee whether your proposals include furniture, as per specifications, or not; also, please state what are your separate estimates on mason work, carpenter's work, and stone-cutting.

Your answer by this evening at six o'clock will oblige, sir, your obedient servant,

ROBERT DALE OWEN,
Chairman Building Committee.

The letters were placed in the hands of the messenger at ¼ past one o'clock.

And, on motion, the committee adjourned.

Ninth Meeting, March 17, 1847.

Present, Messrs. Seaton, Hough, and Owen.

The Chairman laid before the committee the following replies to the letter addressed yesterday to sundry bidders.

WASHINGTON, *March* 17, 1847.

SIR: In answer to your letter of this day, and in compliance therewith, I have the honor to state that my bid for the carpentry work included the furniture, in accordance with specification, as also my general bid.

My separate estimates, constituting the bid for the whole building, were—

Mason	$80,000
Stone-cutting	94,800
Carpentry work	65,200

I would beg leave here to explain that my bid for the whole job did not contemplate the erection of the building of Seneca stone, but of white marble or granite; I should deduct $35,000 from the amount if the building committee decide upon using that kind of stone,* instead of the more beautiful, costly, and durable marble or granite.

Respectfully, yours, &c., B. B. CURRAN.

Hon. ROBERT DALE OWEN, *Chairman Building Committee.*

GENTLEMEN: In reply to your letter of this morning, I beg leave to answer that I did not include the furniture in my estimate; and the separate estimates from which I made up my proposition were as follows:

SENECA.

Rubble.		*Cut.*	
Cutting and stone	$70,000	Cutting and stone	$70,000
Stone for face	5,000	Stone for face	16,000
Mason	60,000	Mason	58,000
Fire-proofing	12,000	Fire-proofing	10,000
Carpenters	67,000	Carpenters	65,000
	$214,000		$219,500

MARBLE.

Cutting and stone	$75,000	Cutting and stone	$75,000
Stone for face work	12,000	Ashlar	20,000
Mason	61,000	Mason	58,500
Fire-proofing	10,000	Fire-proofing	10,000
Carpenter	67,000	Carpenter	67,000
	$225,000		$230,500

F. GERARD.

* This bid is for Seneca *rubble*.—R. D. O.

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WASHINGTON CITY, *March* 16, 1847.

In answering your letter that I received this morning, I beg leave to say, that in my estimate to build your job I did not make any offer for furniture, as I always thought it not included in the building proposal.

Separate bills of Seneca stone.

Mason work	$79,000,	with rubble.
Carpenter work	60,000,	do.
Stone-cutting	61,000,	do.

If you put in ashlar, you would add to the above bill $3,000—making $203,000.

I am, sir, very respectfully, &c.,

GILBERT CAMERON.

Hon. R. D. OWEN.

WASHINGTON, *March* 16, 1847.

SIR: In answering yours of to-day, I have to inform you that

my mason's bill is	$50,000	
Carpenters' bill	66,000	
Cut stone	80,000	
	196,000	(rubble.)
If cut in range work, add	6,750	
	$202,750	

If in marble (ashlar) from Symington's quarry, $228,500.

If in marble from Symington's quarry, (rubble,) $224,000.

JAMES DIXON & CO.

Hon. ROBERT DALE OWEN.

N. B.—Furniture included in both instances.

J. D.

WASHINGTON, *March* 16, 1847.

GENTLEMEN: After examining Mr. Adams's papers, I have been able to discover the mistake in the bill that we hurriedly put in last night, and must express my thanks for your kindness in enabling me to correct it.

The following I think is correct:

East Chester marble—furnishing and cutting marble	$79,000
Mason work with rubble	82,000
Carpenters, furnishing all	62,000
	223,000
Add ashlar to this	25,000
	248,000
Reductions on account of ashlar	17,000
	231,000
Mount Pleasant marble, ashlar	$101,725
Mason's bill	82,000
Carpenter	62,000
	245,725
Deduct	12,000
	*$213,725

I hope you will excuse me for delaying you so long in waiting an answer.

GILBERT CAMERON, for BUTLER & CO.

To the BUILDING COMMITTEE OF THE SMITHSONIAN INSTITUTION.

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*Apparent error in addition, inasmuch as $245,725 — $12,000 = $233,725.

R. D. O.

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MARCH 16, 1847.

GENTLEMEN: In answer to your circular, I would state that my estimates did *not* include furniture.

My estimates in detail were as follows:

Seneca rubble estimates.

For stone-cutting and dimension stone	$71,000
Stone for face work	7,500
Mason's bill	61,000
Fire-proofing	18,000
Carpenter's bill	67,500
	$220,000

For marble rubble face.

For stone-cutting and dimension stone	$75,000
Marble rubble	14,000
Mason	61,000
Fire-proof	12,000
Carpenter	65,000
	$227,000

For marble with ashlar face.

Stone-cutting and dimension	$75,000
Ashlar for face	20,500
Mason	57,500
Fire-proof	12,000
Carpenter	65,500
	$230,500

Yours, with esteem, T. M. NIVEN.

To the BUILDING COMMITTEE OF THE SMITHSONIAN INSTITUTION.

After carefully examining the bids in detail, the messenger was requested to ask Mr. Niven into the committee room; and on being asked whether he was willing to make a contract at his estimate for stone cutting alone, he (Mr. Niven) replied in the affirmative. The messenger was then requested to call Mr. Dixon; and on being asked whether he was willing to make a contract for the work *exclusive* of stone cutting, he (Mr. Dixon) asked until to-morrow morning to give an answer.

He was requested to see Mr. Niven on the subject, so as to ascertain whether a contract could be made with them jointly, based on Mr. Niven's bid for stone cutting, and James Dixon & Co.'s bid for mason and carpenter's work.

After conference in regard to the special provisions of the contract, the architect was requested to draw up a blank contract, and submit the same to the committee at their meeting to-morrow.

And, on motion, the committee adjourned.

Tenth Meeting, March 18, 1847.

Present, Messrs. Seaton, Hough, and Owen.

On motion of the chairman, it was—

Resolved, That the specifications be altered so as to require that both the principal stairways, as high as the museum floor, be of stone, with iron balusters, bronzed; and that a floor above the ceiling of the second story, fire-proofed, according to the plan proposed in the report made on the 15th instant, by Mr. Hough, be added; and that the tessellated floor of the museum be dispensed with; and that Mr. Hough be a sub-committee to consult with the architect as to what minor alterations in the specifications can be made, so as, with the reduction effected by dispensing with the said tesselated floor of the museum, to meet the additional cost of said stairways and said fire-proof floor, without increasing the aggregate expense of the entire building.

Mr. Dixon, of the firm of James Dixon & Co., appeared, and informed the committee that he was not willing to take the mason's and capenter's work separate from the stone-cutter's, as yesterday proposed to him. He also informed the committee

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that he had made an error in the addition of his bid for Seneca ashlar of $2,50
that the committee must consider that bid as amounting in the total to $205,25
which amount he stood ready to contract.

It appearing that the bids of James Dixon & Co., for the building, were the l
est, to wit:

For Seneca ashlar	$205,250
And in marble ashlar	228,500

And it further appearing to the committee that the ashlar finish of Seneca ston
more durable than the rubble finish, the committee informed Mr. Dixon that his
to complete the building in the Seneca freestone, ashlar finish, for the sum of
hundred and five thousand two hundred and fifty dollars, was accepted.

On motion of the chairman, it was—

Resolved, That Mr. Hough, and the architect, be a sub-committee to prepar
blank contract, submit the same to James Dixon & Co., and, after obtaining th
assent to the same, present it to this committee for approval.

And, on motion, the committee adjourned.

Eleventh Meeting, March 18, 1847, (5 *o'clock, p. m.*)

Present, Messrs. Owen and Hough.

On motion of Mr. Hough, it was—

Resolved, That Mr. Owen address a letter to Mr. John P. C. Peter, accepting t
offer of quarry-right made to the committee, in letter of Mr. Peter to Mr. Seat
dated 9th December last, and place the said letter in the hands of Mr. Dixon, to
forwarded to Mr. Peter.

And, on motion, the committee adjourned.

Twelfth Meeting, March 19, 1847.

Present, Messrs. Seaton, Hough, and Owen.

The chairman submitted to the committee a copy of the letter which, in accorda
with a resolution passed yesterday, he addressed to Mr. John P. C. Peter, owner
the Bull Run quarry, in Montgomery county, Maryland, and which he had, l
evening, caused to be delivered to Mr. Dixon, as follows:

WASHINGTON, *March* 18, 1847.

SIR: I am requested by the Building Committee of the Smithsonian Institution
inform you, that they have to-day decided upon the material for their buildin
that their choice is Seneca freestone from some one of your quarries, if sufficie
suitable stone can be found in them—probably from that of Bull Run; and that th
accept your offer made to them in your letter of the 9th December last, addressed
Mr. Seaton, namely, to pay you twenty-five cents per perch for all stone intended f
cut work, and twelve and a half cents for all calculated for hammered work.

I am, sir, your obedient servant,

ROBERT DALE OWEN,
Chairman Building Committee.

JOHN P. C. PETER, Esq.

On motion of Mr. Owen, it was—

Resolved, That the resolution heretofore adopted, instructing Mr. Peter Gorman t
obtain four perches of freestone from Seneca creek, be and the same is hereb
rescinded.

On motion of Mr. Owen, it was—

Resolved, That the resolution heretofore adopted, instructing Dr. Owen to mak
chemical analyses of the Maryland marbles, and particularly of those from M
Worthington's and Mr. Symington's quarries, be and the same is hereby rescinded.

On motion of Mr. Hough, it was—

Resolved, That Mr. Owen be requested to write to Mr. McLane, president of th
Baltimore and Ohio railroad, and to Mr. Howard, president of the Baltimore an
Susquehanna railroad, and to inform them that although, for the sake of econom
the freestone of the upper Potomac has been selected as a building-material, th
committee desire to express their sense of the prompt liberality with which the boar
of these railroad companies had adopted the suggestion of the Building Committ

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in regard to reduction of the rates of transportation in favor of the Institution, in case marble was selected.

And, on motion, the committee adjourned to meet at eight o'clock this evening.

Thirteenth Meeting, March 19, 1847, (8 *o'clock, p. m.*)

Present, Messrs. Seaton, Hough, and Owen.

The contractors, Messrs. Dixon and Cameron, appeared; and the contract for the buildings of the institution, which had been prepared by the architect and revised by the committee, having been read to them, they expressed their assent to all its provisions, and declared themselves ready to execute the same.

Thereupon the Secretary of the Institution, being present, represented to the committee that one of the Regents, now in the city, to wit: Professor A. D. Bache, requested to be allowed to examine the provisions of the contract before it was finally executed; but that Mr. Bache was at present too ill to read or examine it.

Upon this suggestion, the committee asked the contractors whether they were willing now to sign, leaving the signatures of the committee to be added to-morrow, after Professor Bache should have had an opportunity to examine the contract.

And the contractors assenting, signed the contract.

On motion of the chairman, it was—

Resolved, That the architect and Dr. Owen proceed to-morrow to Seneca creek, for the purpose of examining the quarries in its vicinity, with the view of selecting the one from which it is expedient to derive the material with which to face the building; and that they present to this committee specimens of the exact tint and quality of freestone they may concur in recommending.

And, on motion, the committee adjourned.

Fourteenth Meeting, March 20, 1847.

Present, Messrs. Seaton, Hough, and Owen.

The chairman stated to the committee that he had a conversation with Professor Bache and the Secretary of the Institution, and, availing himself of suggestions made by them, had prepared an addendum to the contract; which he submitted, as follows:

"It is further understood and agreed by and between the parties to the above agreement, that if the Board of Regents should determine to make important alterations in the plan of building, or in the time of its execution, then, and in that case, the said party of the first part shall receive *pro rata*, according to the prices agreed in the foregoing contract, for work executed, and reasonable damages, if the nature of the case justly demands it. And in case of dispute or controversy in regard to the amount, then the party of the second part may select either the architect of the Institution, or any other architect or architects, to arbitrate in the case, and his or their decision shall be final and conclusive in the premises."

And, on motion, it was adopted and signed by the committee, with the understanding that it be submitted to the contractors for their signature. Thereupon the committee proceeded to the site belonging to the Institution, and carefully examined the same, with reference to the exact position in which to place the building; but came to no final decision thereon.

And, on motion, the committee adjourned.

Fifteenth Meeting, March 20, 1847, (5 *o'clock.*)

Present, Messrs. Seaton, Hough, and Owen.

Mr. Dixon appeared and signed the "addendum." And the committee appended their signatures to the contract, thus completing the same, as follows:

Contract.

This agreement, made and concluded this nineteenth day of March, in the year of our Lord one thousand eight hundred and forty-seven, between James Dixon and Gilbert Cameron, party of the first part, and the Board of Regents of the Smithsonian Institution, by Robert Dale Owen, William W. Seaton, and William J. Hough, a committee of three of their number duly appointed for the purpose, and for and in behalf of the said Institution, and in accordance with the provision of the fifth section of the act of Congress establishing said Institution, of the second part, witnesseth: That the said party of the first part, for their heirs, executors, administrators, and assigns, hereby convenant and agree to and with the said party of the second part, that for and in consideration of the sum of two hundred and five thousand two

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hundred and fifty dollars, to be paid to them by the said party of the second part, in the manner and at the times hereinafter specified, they will furnish all the materials of every description and perform all the work necessary to construct and completely finish, in the most full, substantial, and workmanlike manner, the whole of the carpenter work, stone-cutting, and mason work, and work connected therewith, for the building of the Smithsonian Institution, in each and all of its parts, including all of its appurtenances, said building being situated on the site for the building of said Institution, in the city of Washington, and in a position designated by the said parties of the second part. And the said party of the first part hereby further covenant and agree, that the construction of the said building and its appurtenances shall be in every respect in accordance with the plans, specifications, and directions of James Renwick, junior, the architect of the said Institution, all of which shall be considered as part of this contract; which said specifications are hereunto annexed. And the said parties of the first part hereby further covenant and agree that they will furnish materials of the best description, and that the work shall be performed in the most workmanlike and substantial manner.

And it is hereby agreed by the parties to this contract, that the work, during its progress, shall be subject to the inspection and decision of the said architect, who shall have, and is hereby granted, power to condemn and reject all materials and work which shall not, in his opinion, be in accordance with this contract; and the said parties of the first part hereby agree that they will take down all work and remove from the ground all materials which may be condemned by the said architect, at their own cost and expense, on pain of forfeiture of this contract, as hereinafter specified.

And it is hereby agreed by the parties to this contract, that the execution and completion of the building herein contracted for shall occupy a period of five years from the nineteenth day of March, in the year of our Lord one thousand eight hundred and forty-seven, and in such proportions thereof, in and during each year thereof, as the said party of the second part shall direct; and such work to be done at such times and seasons, and in such order, as the said architect shall direct; it being expressly understood that an amount of not more than $41,000 shall be expended annually during the first four years of this agreement.

And it is hereby mutually agreed by the parties to this contract, that the parts composing the said building shall be erected in the following times and order, viz: the wings and connecting ranges within two years, and the remainder of the building within five years, from the first day of January, one thousand eight hundred and forty-seven.

And it is hereby further agreed by the said party of the first part, that they will perform all work embraced in this contract as above specified, agreed, and understood.

And it is hereby mutually agreed, covenanted, and understood by the parties to this contract, that, in order to prevent all disputes, the said above-mentioned architect shall decide every question, controversy, or claim, which may or can arise during the execution of this contract from alterations in plan or in any other manner, and that his estimate and decision thereon shall be final and conclusive between the parties, who hereby mutually bind themselves each to the other, to submit to the said estimate and decision of said architect, in the sum of forty thousand dollars, which is to be forfeited and paid by the party who shall neglect or refuse to abide by and perform said estimate and decision to the other party to this contract.

And the said party of the second part hereby agree that they will pay the abovementioned sum of two hundred and five thousand two hundred and fifty dollars, ($205,250,) in gold and silver, or in Treasury notes bearing six per cent. interest, at their par value, for the whole work, to the said party of the first part, in the manner and times following, to wit: every two months for all materials delivered and work executed according to the estimate and certificate of the aforesaid architect, reserving fifteen per cent. therefrom until the completion of the work; and that when the whole building and work shall be completed, and upon certificate of the aforesaid architect that it has been finished in every respect to his satisfaction, according to the terms of this contract, they will pay the balance which may then be due, including said fifteen per cent., and the interest that may have accrued on said fifteen per cent., at the rate of six per cent. per annum from the times of the several estimates.

And it is hereby agreed and covenanted, that if at any time the said parties of the first part shall, in the opinion of the aforesaid architect, have performed any of the work embraced in the contract in an unfaithful or improper manner, or shall have violated any of the provisions of this contract, or shall refuse to prosecute the work herein contracted for, that then, and in that case, the said architect shall give notice

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the same in writing to the said parties of the second part, any two of whom may reupon terminate this said contract by giving notice thereof in writing to the d party of the first part; and that thereupon this contract shall be deemed minated, abandoned, and lawfully forfeited by the said party of the first part, and said party of the second part may proceed to contract for the remainder of the rk with any other party or parties, holding all the work done and materials livered by the said party of the first part, and all the moneys due them therefor, as urity for the remainder of the work; and also holding and binding the said party the first part, their heirs, executors, administrators, assigns, and bondsmen, to ke good any further loss or damage which may accrue to the said party of the ond part from such defalcation, forfeiture, and abandonment of the work by the d party of the first part.

And it is hereby further agreed and understood by the parties to this contract that following alterations in the plans and specifications shall be made, and that the me shall be considered as part of this contract:

First. The building shall be faced, and all the cut-stone work dressed from the t Seneca freestone from the upper Potomac, to be taken from the Bull Run quarry, some other quarry in the neighborhood of Seneca creek, to be designated by the d parties of the second part, and free from all imperfections.

Second. That the building shall be faced with coursed ashlar of the above-menned freestone, in courses varying from ten to fifteen inches in height, and no two jacent courses in the building to vary more than one inch in height, brought to a nt not exceeding three-eighths ($\frac{3}{8}$) of an inch in the widest place when laid, taken t of wind; dressed full to the square on the beds, builds, and joints, with a narrow ras drawn around the face of each stone, and the face between the arres pointed off rizontally in a regular manner and at regular distances—say not more than two ches apart, averaging nine inches in thickness, with a proper proportion of bond me to bind the face to the backing—say one in every 8½ feet square; the clause in e mason's specification, commencing with "the face of the walls shall be strongly d to the backing," being continued in full force and effect. The whole of the ove ashlar to be set in the best manner, and pointed in the manner described in the son's specification.

Third. That in place of the principal flights of the front and rear stairways, as ecified in the carpenter's specification, cut-stone steps and platforms of such free-ne as shall be selected by the architect, which shall be fine cut and rubbed, with ndsome cast-iron newels and balusters, similar to the wooden ones described in the rpenter's specification, and well bronzed in the best manner, with a heavy moulded nd-rail of the best well-seasoned black walnut, shall be substituted. On the heads each of the above cut-stone steps and platforms, Norman pateras, or flower orna-nts, shall be cut by the contractor. The above stone steps shall be carried up as gh as the level of the museum floor.

Fourth. That a floor of one and a quarter inch white pine plank, resting on beams white pine 2 × 12 inches, set twenty inches from centres, shall be carried under e roofs of the whole building and towers; and that the floor beams shall be sup-rted by 8 × 12 inch girders, where necessary, and plastering of cement mortar o inches in thickness shall be laid over the top of all the said above-mentioned ors.

Fifth. That in place of the iron timbers having brick arches and concrete between em, which are specified to be placed in the chemical lecture-room, the students' orking laboratory, and the rooms over it, wooden beams 8 × 12 inches, set 16 ches from centres, with a deafening of cement concrete four inches in thickness tween them, resting on one and a quarter inch plank, firmly secured to the beams 8 × 1½ inch strips, shall be substituted. The above beams shall be furred on the der side, with 2 × 1½ inch stripes, set one foot from centres, and plastered three ats; the last coat shall be hard-finished.

Sixth. That in the place of the iron columns in the larger lecture room, wooden lumns, nine inches square, which shall be furred, lathed, and stuccoed in the best anner, with reeds forming clustered columns with foliage caps, bases and plinths, all be substituted.

Seventh. That in the place of the tesselated wooden floor of the museum, a floor of arrow clear Georgia yellow pine plank, not more than five inches wide, planed, ngued and grooved, laid in courses and blind-nailed in the best manner, shall be id. The heads and sides of all the plank shall be planed after they are laid, so as be perfectly true and even when finished.

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Eighth. That on the eight corners of the fourth story of the higher central front tower, eight columns, one foot in diameter and of the height of the story, with foliage caps, bases, and plinths, shall be well and truly cut.

And it is hereby further covenanted and agreed by the said parties of the first part, that they will not employ any sub-contractor who shall be objected to by the architect; and further, that the said architect shall have power to discharge any laborer, foreman, and sub-contractor, who may, in his opinion, be incompetent or unfaithful; and the said parties of the first part shall not further or again employ, directly or indirectly, any of the above-mentioned persons, on pain of forfeiture of this contract, as hereinbefore specified. And the said parties to this contract hereby mutually agree, that in case of the absence of the said architect, or of his inability to act, that then, and in that case, his assistant or successor, to be appointed by the said party of the second part, shall be, and is hereby, invested with all the powers granted to the aforesaid architect, in this contract.

In witness whereof, the said party of the first part have hereunto set their hands and seals, and the said party of the second part hereunto subscribed their names, and affixed the seal of the Smithsonian Institution, the day and year first above written.

Signed, sealed, and delivered, in presence of

JAMES DIXON, [L. S.]
GILBERT CAMERON, [L. S.]
ROBERT DALE OWEN,
WILLIAM J. HOUGH, } *Committee.*
W. W. SEATON,

Addendum to the Above Contract.

It is further understood and agreed by and between the parties to the above agreement, that if the Board of Regents should determine to make important alterations in the plan of building, or in the time of its execution, then, and in that case, the said party of the first part shall receive *pro rata*, according to the prices agreed in the foregoing contract, for work executed, and reasonable damages, if the nature of the case justly demands it; and in case of dispute or controversy in regard to the amount, then the party of the second part may select either the architect of the Institution, or any other architect or architects, to arbitrate in the case, and his or their decision shall be final and conclusive in the premises.

JAMES DIXON.
GILBERT CAMERON.
ROBERT DALE OWEN,
WILLIAM J. HOUGH, } *Committee.*
W. W. SEATON,

WASHINGTON CITY, D. C., *March* 19, 1847.

Specification of the Masonry and Materials for the Smithsonian Institution.

GENERAL DESCRIPTION OF BUILDING.

The building will consist of a centre, which will be 50 by 200 feet in the clear, inside. Two connecting ranges, 60 feet in length in the clear, inside, and averaging 47 feet broad, in the clear, inside. An east wing, 45 by 75 feet in the clear, inside, with a vestibule and porch attached to it; and a west wing, 34 by 65 feet in the clear, inside, exclusive of the apsis or semi-circular projection.

Towers.—There will be two central front towers, one central rear tower, a campanile or bell tower, a large octagonal and two smaller towers, with porches, vestibules, stair halls, &c., attached to the centre.

The east wing, or chemical lecture-room, will have a bell tower, six chimneys, a vestibule and porch, attached to it; and the west wing will have a campanile tower, and apsis or semicircular end connected with it.

The central building will contain, in the first story, the principal central hall, and the library, with groined ceilings, and the principal lecture-room, with a panelled ceiling. The second story will contain the museum, also finished with a groined ceiling.

The larger central front tower will contain a furnace cellar in the basement. In the first story a librarian's room, and a room over it in a mezzanine story, all with groined ceilings. In the second story, a room connected with the museum, with a

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groined ceiling, and over it a room eight feet in height. Above the line of the roof of the main building it will contain four stories, completely finished.

The lower central front tower will be divided in the same manner below the line of the roof; and, above this line, will contain three completely finished stories. The spaces between the front towers, and between the central building and the front towers, will contain in the basement a cellar, connecting the coal cellars in the towers. In the first story the front vestibule, with a groined ceiling, and the front stair wells; and in the second story, a continuation of the museum, with groined ceilings, and the second flight of front stairs, with groined ceilings. Between the two towers the carriage porch will project, and shall have a groined ceiling.

The central rear tower will contain, in the basement, a furnace cellar; in the first story, the rear vestibule, and part of the rear stair hall; in the second story the Regents' room, and a room over the rear staircase hall, which will be connected with the museum, all having groined ceilings; and, in the third story, which will be divided internally into two stories, the lower one the Secretary's and the upper one a muniment room.

In the small octagonal tower connected with the central rear tower, will be a circular staircase and a fire-proof safe.

In the space between the central rear tower and the main building will be the remainder of the central rear stair hall; and over it a room connected with the gallery of the museum, all having groined ceilings.

The campanile tower will have a furnace cellar in the basement, and will be divided above the basement and below the roof of the main central building, into three stories, with groined ceilings communicating with the principal lecture-room and the museum. Above the line of the roof it will be divided into four stories, completely finished.

The larger octagonal tower will contain, in the basement, a furnace cellar; in the first story a circular stair, with a groined ceiling, connecting the gallery of the library with its ground floor; in the second story a similar circular stairway; and above the line of the roof of the central building two stories, completely finished.

The two smaller towers will contain elevators and ventilating flues.

The west connecting range will be finished in the basement eight feet high in the clear; above the basement it will be occupied with a cloister and gallery of art; which latter will be divided by stone pillars, supporting a clerestory, into three aisles, with groined ceilings.

The west wing will be finished in the basement eight feet six inches high in the clear; the upper story will contain a gallery of art, with a groined ceiling. The tower attached to the west wing will be occupied by a staircase well, and other apartments, with groined ceilings where directed.

The east connecting range will be finished in the basement eight feet six inches high in the clear, and behind the cloister and above the basement it will be divided into two stories, each twelve feet high in the clear. The upper story will be lighted by openings in the parapet, which is not shown in the plans, but which will be three feet six inches high; both stories will be completely finished. The cloister will extend along the front of the wing, and will have a groined ceiling.

The basement of the west wing, and its vestibule, will be finished nine to ten feet high in the clear.

Above the basement it will contain the chemical lecture-room and its gallery, and the laboratory connected with it; which latter will be divided into two finished stories.

The vestibule will contain the stair hall, and all the above rooms will be finished with groined ceilings.

Excavation, levelling, and refilling.—The trench for the foundation walls of the central building shall be excavated to a depth of four feet six inches, and for the connecting range and wings to a depth of five feet six inches below the present surface of the ground, at the centre of the north side of the building.

The trench for the foundation walls of the principal central front towers and the central rear tower shall be excavated to a depth of eight feet (8 feet) below the above line; and for the campanile, octagonal, and all the lesser towers, to a depth of six feet (6 feet) below the above line.

The trenches for all the partition and interior walls, and for all the foundations under pillars, &c., shall be excavated to the same depth as those for the outside walls with which they are connected.

The earth between the wall trenches, in both wings, both connecting ranges, and

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the great lecture-room, shall be excavated to a depth of 5 feet below the same line under the whole building.

The earth between the foundation trenches of all the towers and the space on the north front between the central towers will be excavated to a depth of 6 inches less than the trenches of the walls.

All remaining excavation for areas, coal slides, cess-pools, sinks, &c., necessary to complete the building, to be performed by the contractor, and according to the direction of the architect.

Refilling.—A part of the earth thus excavated shall be thrown back into the trenches, (on the outside of the walls and inside, so far as may be directed,) after the walls are built. It shall be thrown in in layers, and well rammed, so as to prevent all settlement. The remainder of the earth shall be removed and leveled off in such places and in such manner as may be directed by architect.

Outside excavation.—All the excavation necessary to bring the present surface of the ground to a level with the top of the foundation wall at the building, and to slope it in every direction for drainage, for a width of 60 feet (sixty feet) from the building, in every direction, will be performed by the contractor.

Grubbing and clearing.—All the sod, roots, and in general all vegetable mould and perishable matter, shall be removed from the whole area covered by the building.

And, in general, all excavation, refilling, grubbing, and clearing, necessary to complete the building in every respect, will be performed by the contractor, in accordance with the directions of the architect.

Masonry in foundation—concrete.—Under all the walls of the building a foundation course of concrete masonry, which shall be made by mixing two parts of best hydraulic cement with one part of lime in paste, with eight parts of clean sharp sand, which shall be thoroughly mixed and well tempered, and nine parts of broken stone, not exceeding two and a half inches in diameter. The whole shall then be thoroughly mixed, and well tempered, and laid in courses of six inches, and shall be well rammed, when laid, with a heavy maul, so as to insure the perfect solidity of the whole mass.

The concrete shall be laid to the following dimensions, under the different parts of the building:

A.—Under the two central front towers twelve (12) feet wide on bottom, ten (10) feet wide on the top, and two (2) feet in thickness, under all the walls and buttresses.

B.—Under the central rear tower, and the campanile and octagonal towers, ten feet wide on the bottom, eight feet wide on top, and two feet in thickness, under all the walls and buttresses.

C.—Under all the remaining towers, eight feet wide on the bottom, six feet wide on the top, and one foot six inches in thickness.

D.—Under the walls and buttresses of the central building, six feet wide on the bottom, five feet wide on the top, and one foot in thickness.

E.—Under the connecting ranges and principal partition walls, four feet six inches wide on the bottom, three feet six inches wide on the top, and one foot in thickness.

F.—Under the wings, five feet wide on the bottom, four feet wide on top, and one foot in thickness.

G.—Under the piers supporting the clerestory columns of the gallery of art, six feet six inches square on the bottom, five feet square on the top, and two feet in thickness.

H.—Under all the remaining piers, for the columns of the library and the lecture-room, five feet square on the bottom, four feet square on the top, and one foot six inches in thickness.

Stone masonry in foundation.—The masonry of the foundation shall be laid of large, well shaped, gneiss building stone, of the best quality, with level beds and builds, laid in courses, with strong bond. The stones shall be of large size, not less than three feet in length; the beds shall be hammered true and even, and the joints brought close together. All the joints shall be filled completely with mortar and spaulls, so as to leave no cavities which might endanger the stability of the walls, and the outside joints shall be well pointed.

The foundation shall be laid of the following dimensions of cross section, under the different portions of the building:

A.—Under the central front towers—1st, a course nine feet wide and two feet thick; 2d, a course seven feet wide and two feet thick; 3d, a course five and a half feet wide and two feet thick.

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B.—Under the central rear tower, and the campanile and octagonal towers—1st, a course of stone seven feet wide and two feet thick; 2d, a course of stone five feet wide and two feet thick.

C.—Under all the remaining towers—1st, a course of stone five feet wide and two feet thick; 2d, a course of stone four feet wide and two feet thick.

D.—Under all the walls of central building—1st, a course of stone four feet and a half wide and two feet thick; 2d, a course of stone three feet eight inches wide and one and a half foot thick.

E.—Under the connecting ranges and principal partition walls, the foundation will be three feet six inches wide, and four feet six inches in height.

F.—Under the wings—1st, a course four feet wide and two feet thick; 2d, a course three feet six inches wide and two feet six inches thick.

G.—Under the piers supporting the clerestory of the gallery of art, a foundation of stone four feet square on the bottom, two feet six inches square on the top, and three feet in height.

H.—Under all the remaining piers, for the columns of library, lecture-room, &c., a foundation two feet square, and three feet six inches in thickness.

I.—Under all the remaining partition walls a course of long stone, three feet six inches in length, and not less than eight inches in thickness, will be laid.

Under all the porches and buttresses, the foundation will be of the same section and materials as the walls they are connected with, and they will be well bonded to them. All the remaining stone work, necessary to complete the foundation, will be performed; areas and coal slides will be built to all the openings to the furnace cellars, in the towers, and to the basement windows, of such dimensions as may be directed by the architect. The faces of the walls will be well hammer dressed, and neatly pointed.

The mortar for all the above stone foundation walls shall consist of the best hydraulic lime, and clean sharp sand, mixed in the best proportions, and thoroughly tempered.

Brick masonry in foundation.—Inverted arches, of the best hard brick, will be turned under all the openings of the foundation, of the thickness of the walls in which they are placed, and of such other dimensions as the architect shall direct. The arches will be laid in the most true and even manner, with very close joints, which will be well slated up, to prevent all settlement in the mortar.

Groined arches of the best hard brick, laid in the best manner, with close joints, the 7-key courses being grouted up and slated, will be turned under the two central front towers, and space between them, the central rear tower, the campanile and octagonal towers of the main building, and the tower of the west wing. The arches will be nine inches, or one brick thick, and will be backed over with spandrils and haunch walls, and the floors above them will be of the best North river flag, axed smooth on the upper surface, and cut true and even in the joints.

Partition walls.—The main partition walls of the central building will be of stone, in the foundation as above described. The lesser partition walls, for the rooms in the connecting ranges and wings, will be laid up of the best hard brick, and of the following section: 1st, a course of bricks 18 inches wide, 5 inches high; 2d, a course of bricks 14 inches wide, 5 inches high; and for the remainder of the height, or nine feet, they will be nine inches in thickness, and of the lengths shown on plans.

All the above brick masonry shall be laid with the closest possible joints, especially in the arches, which shall be slated in the joints, and all the bricks shall be well wet before they are laid. Proper openings for doors, with semi-circular arched heads turned over them, shall be built in the walls, in the places shown on the plans, and where the architect shall direct.

Arches of brick, of such dimensions as the architect shall direct, will be turned behind all the stone arches of the windows and doors.

The mortar for all the above brick masonry shall be composed of best hydraulic or ground lime, or a mixture of hydraulic cement and lime in paste, mixed with the best clean sharp sand, and thoroughly tempered.

All the remaining stone and brick masonry necessary to complete the foundation to be performed by builder, whether specified or not.

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WALLS OF BUILDING ABOVE FOUNDATION.

Stone masonry.—The walls shall be faced with the best broken rubble masonry, of white marble, or buff-colored Seneca stone of even color and best description, or of granite similar to that in the rear of the General Post Office; and the contractor will state in his estimate the expense of constructing the building with each of the three above described materials. The face of the stone shall be brought to the square by the mason's hammer, care being taken to pick, as far as possible, such stones for the face as will require little dressing; the object being to preserve, as far as practicable, the natural face of the stone, with the crystals unbroken. The beds, joints, and builds of the stone shall be dressed true and even, so that the joints shall not exceed one-half of an inch in the widest place. The style of the front shall be either broken or angular rubble, and the face shall be laid in the manner directed by the architect. The facing shall average ten inches in thickness, and no stone will be allowed in the work whose breadth of bed is less than two-thirds its height. The stone shall be of nearly uniform color, free from all sap, iron pyrites, and all other discoloring or deteriorating material, and especially in the white marble, from the decomposing carbonate of magnesia.

The face of the wall shall be strongly tied to the backing by headers of the same material as the face, running in places through the wall, and in no case less than twenty inches in depth, and furnished in such numbers as the architect shall direct—say one in every three feet six inches square. All the arres of the buttresses, towers, &c., and all the corners, splays, and angles, throughout the whole building, shall be dressed with the chisel so as to be perfectly plumb, true, and even, when laid. No quakers will be allowed in any part of the work. All the stones shall be laid on their natural beds. The heading stones on the corners of all the towers, buttresses, and of the whole building, shall have beds at least equal to their heights on face. The joints shall be pointed with a mixture of the best quicklime and blacksmith's scales and sand, and shall be smooth struck on the face; and, after it has set throughout, the joints shall be painted to the color of the face with the best pure white lead and boiled linseed oil, colored to the color of the stone. All the walls will be backed in with best blue gneiss, of good shape and size, laid on the natural bed, and well bonded to the face work. Behind the outside walls, and at a distance of four inches from them, a five-inch brick wall, tied to the outer wall by at least one bond stone in every three feet square, will be laid. This backing will be returned, to meet the front wall at all the jambs and arches of all the windows and doors. It will also be tied to the front walls, in the piers between the windows, by brick cross walls nine inches thick, to form the flues; which flues will be constructed as follows: In each of the piers between the windows there will be three flues 8 by 16 inches in the clear inside, which will be carried from a point three feet below the under side of the beams of the first story to the top of the building. One of these flues will be connected with the furnaces by a horizontal flue of galvanized iron, or double-cross tin, two feet square, which will be furnished by the contractor, for the purpose of diffusing the hot air throughout the building. All these flues will have neat registers in the rooms, for the proper regulation of the heat. The second flue will have an opening in each story, on the line of the ceiling, on the outside of the wall, and another opening into the bases of the rooms inside; these will admit the cold air from the outside of the building into the respective rooms for the purpose of proper ventilation, and will be closed up on the level of the floor of each story, by a cross wall over the outside opening; and each of the above flues will be furnished with a heavy sheet-tin slide-valve, with proper fixtures for opening and shutting, placed in such part of the flue, and made in such manner, as may be directed by the architect.

The third flues will have openings on the inside on a line with the ceilings of all the rooms; through these the foul and heated air will be carried off and discharged by an opening under the coping of the building. All these flues will be furnished with two sheet-tin valves each, made and placed in the manner directed by the architect. Proper flues, well parged, will be carried up for the furnaces, fireplaces, engine, laboratory, &c., in such places as may be directed by the architect.

In addition to the above ventilating flues, openings with valves will be formed in all the groined ceilings, which will be connected with the corner towers and flues in the larger towers.

Thickness of walls.—The thickness of the walls of the main building above the water tables will be two feet six inches in the first story, and two feet in the second story, exclusive of all projections of the buttresses, corbel courses, battlements, bands, &c.

The thickness of the end walls of the main building will be two feet six inches for

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a height of fifteen feet above the line of the water table, and for the remaining portion two feet, exclusive of all projections.

The thickness of the walls of the connecting ranges above water table will be twenty-two inches, exclusive of all projections.

The thickness of the clerestory wall of the west range will be sixteen inches, and it will be backed in with good hard brick.

The thickness of the walls of both wings will, above the water table, be two feet, exclusive of all projections and the batter at the base of the east wing.

The thickness of the walls of central front towers will be three feet six inches in the first stories, three feet in the second story, two feet six inches in the third story, with the corners filled in to aid in supporting the octagon, and two feet in the fourth story, which will be backed in with good hard brick, exclusive of all projections.

The thickness of the walls of the central rear tower will be three feet in the first story, two feet six inches in the second story, and two feet in the third story, exclusive of all projections.

The thickness of the walls of the campanile, exclusive of all projections, will be two feet to the line of the roof of the main building, and above this line twenty inches, and backed in with best hard brick.

The thickness of the walls of the octagonal tower will be two feet three inches to the line of the roof, and twenty inches above the line of the roof, and backed in with brick, exclusive of the batter at the base and all projections.

The thickness of the walls of the remaining towers will be two feet on an average, exclusive of all projections, and the stories above the roofs will be backed in with brick.

All the remaining walls, if any, to be in no case less than two feet thick, and to be executed by the contractor.

All the thicknesses above given are exclusive of the brick lining wall.

Brick Masonry.—All the partition walls which rise above the basement will be two bricks—say 18 inches in thickness—to the height of the floor of the second story, and one and a half brick—say 14 inches in thickness—from thence to the under side of the rafters of the roof. Arches for doors and windows will be turned, of such sizes and in such places as may be directed by the architect.

All the interior arches behind the window arches, door arches, &c., will be turned in such manner as architect shall direct, to the form of Norman jambs, to receive the plaster of the jambs. Trimmer arches of brick, nine inches thick, will be turned for all the hot-air and furnace flues in all the floors.

The arches over the pillars supporting the clerestory of the gallery of art, in the west connecting range, will be of best hard brick, laid to such form as the architect shall direct, and over them a brick wall eighteen inches thick will be carried up to the level of the under side of the roof of the side aisles.

Groined arches of brick, eight inches thick, will be turned in the most perfect manner for the ceilings of the mezzanine and upper story of the porter's apartments, which will be situated in the lower central front tower; they will be filled in with spandrils and haunch walls, supporting flag floors of North river flag. If preferred by the contractor, the iron beams, with brick arches between them, hereinafter described, may be used in place of the above groined arches.

All the remaining brick-work necessary to complete the building to be performed by the contractor, whether specified or not.

Cut-stone masonry.—All the cut-stone masonry, of every description, which will be found in the specification of the stone and cutting, will be set by the mason in the most true, perfect, and substantial manner; and all the iron dowels, clamps, anchors, rods, &c., necessary to secure and render perfect the stone work, will be furnished by the mason; and the joints of the cut-stone masonry will be pointed in the same manner as above described for the face of building.

Mortar.—All the mortar for all the above brick, stone, and cut-stone masonry, to be composed of the best hydraulic or ground lime, or of a mixture of hydraulic cement and lime in paste, in such proportions as the architect shall direct, mixed with clean sharp sand, in the best proportions, and thoroughly tempered.

All the bricks will be well wet before they are used.

All the stones will be laid on their natural beds, and thoroughly cleaned from dust or dirt before they are laid, and wet, if so directed by the architect.

Lathing and plastering —All the ceilings and walls, and stud partition walls, of every part of the building, will be lathed to the forms laid down on the plans, or as directed by the architect, with the best sawed laths, five nails to each lath.

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All the walls aud ceilings of all the rooms in the basement story will be plastered with a scratch coat, brown coat, and hard-finished coat, laid on true and even, and finished in the best manner.

All the walls and ceilings of the professors' rooms, laboratories, and rooms in the towers, to their tops, except such as are groined, will be plastered in a similar manner, with three coats.

All the canopies and partitions in lecture-rooms to be plastered three coats, as above described.

All the remaining halls and apartments in the whole building, including library, museum, the two lecture-rooms, the two galleries of art, the great central hall and its vestibules, the Regents' room, the front and rear stair halls and the rooms in the two central front towers, the octagonal and campanile towers below the line of the roof of the main building, will be plastered throughout with two coats, a scratch coat and a stucco-finished brown coat, well hand floated, laid on in the most perfect, true, and even manner. The brown coat will be laid off in courses and colored to represent stone.

Ornamental Plastering.—All the ceilings of the museum, library, galleries of arts, and the rooms connected with them, will be groined and ribbed in the best manner, according to the plans and directions of the architect. The ribs will be run at the intersection of all the groins, and across the ceilings between the groins, against the walls over the windows, and in all places which the architect shall direct; all the red lines on the plans being ribs. The ribs shall be of rich Norman section, and of good proportion, varying from 7 by 9 to 11 by 13 inches in the ceilings, and of larger dimensions in the arches over the columns dividing the aisles. In the gallery of art, heavy ribs, twenty inches wide, shall be run under the arches supporting the clere-story.

At the intersection of all the ribs, and at the crown of all the ribs not intersected by others, bosses of foliage, of the best Norman design, which will be furnished by the architect, and of the richest character, well relieved from the grounds, will be placed.

The shafts of the columns, of all the apartments and halls, which shall be of the richest character, composed of clusters of engaged columns in rebates, and made according to the plans of the architect, will be run with gaged mortar, in the best, truest, and most workmanlike manner; and all the separate columns of each clustered shaft shall have moulded plinths, and bases, and foliage Norman caps, of such design as architect shall furnish, and put up and modelled according to his directions.

Around all the windows a handsome moulded Norman jamb and arch, whose section shall be a double rebate, with two engaged columns, shall be run. All the columns of the above to have plinths, and bases, and foliage Norman caps; and a label mould, resting on two foliage corbels, will be run around the arch of each window; and all of the above work shall be executed according to the plans and directions of the architect.

Around all the doors, Norman jambs and arches, of the same section as those of the windows, but with more mouldings, where directed, shall be run. In the arches the mouldings will be ornamented with chevrons, cable moulds, and foliage bands, according to the directions of the architect.

The main central hall, the entrance porch, the rooms in the central front towers, the Regents' room, the rooms and stair wells in the octagonal and campanile towers, and the ceilings of the principal staircase, halls, and vestibules, and vestibule and porch ceilings of the east wing, together with the room over the central front and rear stair halls, and the ceilings of both of the wings, will be also groined and ribbed in the best manner, and finished, in every respect, as above described for the museum, &c. All the doors and windows will be finished as above described.

The ceilings of both the cloisters will be groined in a similar manner.

All the columns, &c., in all the above rooms, will be finished as above described; and there will be in all the rooms of the whole building clustered columns in the centre of the piers between the windows, with plinths, bases, and foliage caps.

The Regents' room will be finished all around with clustered columns and arches, dividing the walls into panels above the wainscoating. All the arches over these columns, and those of the triple-arched opening between the room and the bay window, will be ornamented with zigzag, cable, and other Norman mouldings, as may be directed by the architect. All the doors and windows of all the above rooms to have mouldings, pillars, &c., as above described for the museum, &c.

The main ceilings of the principal lecture-room, and the gallery ceilings of the principal lecture-room, and of that in the east wing, will be level, and will be heavily

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panelled with rich ribs, having foliage bosses at their intersections. All the columns, and half columns, in the center of the piers between the windows, all the window and door jambs and arches of the above rooms, to be of the form and workmanship hereinbefore described.

All the columns, window jambs and arches, door jambs and arches, ribs, &c., of all the above described rooms and halls, to be laid off in courses to represent stone.

All the remaining plaster work, both plain and ornamental, necessary to complete the building, will be performed by the contractor, whether specified or not.

The mortar will be made of the best Potomac or Thomaston finishing lime, and clean sharp sand, mixed in the best proportions, and thoroughly tempered. The plaster for the hard finish and gaged mortar to be of the best quality.

All the arres, angles, ribs, pillars, &c., to be kept perfectly plumb, true, and even.

Coloring of walls.—All the walls which are not hard finished will be colored by a mixture of lime-water and white, green, and blue vitriol, as may be directed; with which such colors, as the architect shall direct, shall be mixed.

The coloring shall be put on in two or three coats, and the last coat shall be colored different shades on the different parts of the walls, ceilings, &c.

Deafening.—All the floors which are not formed on groined ceilings, or on iron beams with brick arches between them, will be deafened with a mixture of lime, clay, and sand mortar, laid on of such thickness as the architect shall direct.

Iron work.—All the copings, cornices, battlements, window jambs and mullions, sills, chimney caps, and, in general, all the stone work, &c., will be tied together with strong wrought-iron clamps, anchors, dowels and rods, well leaded to the stone work, and of such dimensions as may be directed by the architect.

Wrought-iron bars ¾-inch in diameter, and of the widths of the different windows to the outside of the jambs, will be used where directed, to tie the centre mullions to the jambs, especially in the octagonal story of the large central tower, and in the greater and lesser octagonal, and the small square towers of the central building.

A bar of ¾ by 2 inch wrought-iron will be carried all around both stories of the larger octagonal tower, and around the smaller octagonal, and the small square towers of the central building, on a level with the spring line of the arches of the windows.

Gratings, of ¾ by 1½ inch wrought-iron, will be furnished for the areas of the different towers.

Lightning rods.—Five lightning rods, of wrought-iron, one and a half inch in diameter, will be furnished by the mason. They will be furnished with elbows, glass thimbles, and platina points, of the best description, and will be put up in the following places: one on the great central front tower, one on the campanile tower, one on the octagonal tower, one on the tower of the west wing, and one on the tower of the chemical wing; and they will be carried ten feet above the tops of the towers to which they are attached.

Flagging.—The floors of the basement, of the chemical or east wing, and its vestibule, and the east connecting range, shall be flagged with the best North river flag, laid perfectly level, true, and even, and dressed in the joints, and laid in at least 12 inches, of clean sharp sand and gravel, with at least six cesspools, four feet in diameter and six feet deep, under each of the above parts of the building.

The cellars under the front towers, and the space between them, as well as those of the central, rear, campanile, octagonal, and tower of the west wing, will be similarly flagged.

After the flag are laid, the joints will be grouted with a mixture of cement and sand.

The floors of the two cloisters will be flagged with best North river flag, axed perfectly smooth on the upper surface, and the stones will be of equal size from two to three feet square, and laid diamond-wise in cement-mortar.

The floors of the two galleries of art, in the western wing and western connecting range, will be flagged with the best North river flag, axed perfectly smooth, and cut to the form of octagons, of equal size, not more than two feet in diameter. The squares between the octagons will be filled with tiles of white marble or of red Seneca stone, as may be directed by the architect, and this will be laid in best cement and sand-mortar.

The floors of the vestibules and central hall will be flagged with the octagon and square as above.

All the joints of all the above flagging will be cut perfectly true, and the tiles will be bedded on the best cement and sand-mortar.

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The floors of the rooms over the groined arches, in the central front towers, will be flagged with best North river flag, as above described for the cellars themselves, laid in the best cement and sand-mortar.

Fire-proofing.—The floor of the chemical lecture-room, which occupies the whole east wing, and the floors of the students' working laboratory, and the room above it in the east connecting range, each of which is 38 by 24 feet in the clear, will be rendered fire-proof in the following manner: Cast-iron beams of the shape of the letter T reversed, whose vertical arm will be 15 inches in depth, by 1½ inch in width, with a bead on the upper end 2½ inches in diameter, and whose horizontal arm will be 8 inches long, and average 1½ inch in thickness, will be laid four feet from centres; the ends of these beams will run 9 inches into the walls, and will rest on a cast-iron plate, 3 inches wide by 1 inch in depth, which will be firmly anchored to the walls; between these beams, arches of brick five inches in depth will be turned to form the floors. The spandrils over the arches will be filled in with a mixture of lime, sand, and broken stone or gravel, over which a flooring of best North river flag, well axed on the upper face, and not more than two inches thick, will be laid in the best cement and sand-mortar.

The floors of the rooms over the janitor's room and of the two rooms in the towers, on a level with the museum, making in all four floors 16 feet square, (exclusive of those over the groined arches in the cellars of the front towers,) will be similarly fire-proofed, unless they are groined with brick as hereinbefore specified.

The floor of the principal lecture-room will be tiled with best North river flag, laid on brick cross-walls, and well jointed and bedded in cement and sand-mortar.

A border of colored marble tiles four inches square, laid on bricks, in cement or plaster of Paris, will be carried around the Regents' room, three feet in width.

Safe.—A fire-proof safe will be constructed in the small octagonal tower, attached to the rear tower, with double wrought-iron doors, and iron shelves and hollow brick casings, per directions of architect.

A mantelpiece of red marble, or of such color as the architect shall direct, and of the richest Norman pattern, having two columns on each side, whose shafts will be a cable-mould and chevron, with plinths and moulded bases, and foliage caps of the richest character; over the columns a rich frieze, which will be ornamented by a band of Norman foliage, will be carried, and over this a label mould filled with pateras or rosettes. Upon this mould the shelf will be laid, which will be at least three inches thick, and moulded in the front and ends. All the remaining parts of the chimney will be completely finished in the best manner. The sides and back of the fireplace will be laid up of best fire-brick, laid herring-bone fashion.

Dry walls of stone.—There will be four sinks or cesspools, eight feet in diameter and twelve feet deep, walled up in the best manner, with dry stone, and placed in such positions as the architect shall direct.

Twenty-four cesspools, four feet in diameter and six feet deep, walled up with dry stone, will be built under the different floors of the building.

All the remaining mason work of every description, necessary to complete the whole building in the most perfect manner, will be performed by the contractor.

As it is the intention of the above specification, with the plans, to cover the entire and perfect completion of the work, no charge for extra work will be allowed the contractor, unless caused by actual alterations of the plans. And the contractor will be bound by the sum of $10,000, to abide by the decision of the architect, whose decision in all matters relating to the form, dimensions, and finish of all the parts of the work, shall be final and conclusive.

J. RENWICK, JR., *Architect.*

[NOTE.—Contractors will also estimate the difference in expense between facing the building with rubble masonry, as hereinbefore specified, or of setting the whole face with ashlar, varying in height of course from ten to fourteen inches, and averaging eight inches in thickness, the ashlar being furnished by the stone-cutter.]

Specification of the stone and cutting for the Smithsonian Institution.

GENERAL DESCRIPTION OF STONE.

The contractors will estimate on furnishing all the stone necessary for the cutting and the expense of the cutting itself, and will furnish three separate estimates of the above, based on white marble, buff-colored sandstone of the best quality and uniform color from the upper Potomac, and granite of the same color and quality as that in the rear of the General Post Office of the United States.

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CUTTING.

North front porch.—Will consist of three arched openings of the dimensions shown on plans, in courses not exceeding 15 nor less than 12 inches rise. The jambs will each contain four rebates, filled each with a ¾ column on the exterior face, and one rebate, filled in like manner, on the interior face. [See plan A, drawings No. 1.] All the columns will have handsome moulded Norman plinths and bases and foliage caps. The arches of each side will contain a similar number of mouldings to the jambs, and each arch will be ornamented with a zigzag, battlement, and cable, or other ornamented mouldings.

The buttresses will be cut of similar courses to the doors, and bush-hammered on the face, with moulded caps and a double water table. Between the buttresses on all three sides a corbel course handsomely cut, and eight to twelve inches projection of semicircular arches, resting on foliage brackets, will be carried; and over the corbel course a label mould supporting the battlement. The battlement will be well cut to the section shown in No. 2, plan A. All the face work of the porch will be cut both inside and outside.

Front door.—Between the central front towers and under the porch a door, of the dimensions shown on the plans, will be placed. The jambs will consist of three rebates with ¾ columns, bases and caps, cut as above, and the arch will contain three mouldings, one of which will be ornamented with a zigzag or cable mould.

Sills and steps.—The sill of the door will be made in three heights of eight inches each, to form steps to rise from the ground to the first floor.

The window and niches over front door will have jambs of a single rebate, with a ¾ column, with moulded plinths, bases and foliage caps. In the arches the columns will be replaced by an octagon, and an octagonal label mould resting on four corbels will be carried over the heads of the three openings, for section of windows. (See plan A, No. 3.) Sills will be 10 inches in height.

Circular window will be of the diameter shown on plan. The section of the jamb will be as shown on plan A, No. 4, and the tracery will be per plans and direction of architect, the mullions not being less than six inches diameter, with moulded caps, plinths and bases, and the arches being splayed on both sides, and handsomely foiled; the foil in centre to be sunk through.

The moulding under the circular window will be a hook label, of size shown on plans.

If so directed, the circular window shall have tracery similar to the one in the west end of the centre building.

Under the interlaced arches of the battlement, another label mould, eight to twelve inches high, will run. The interlaced arches will be 18 inches higher than shown in plan, and will be sunk through. The pillars will be octagonal, with plain plinths, bases and caps, supporting the arches, and over the arches a neat hook label of proper size will be run. Niches or windows in pediment. Three niches, (or if so directed, windows,) with a splay and column jamb and arch, (plan A, No. 5,) will be cut for the pediment. Their sills seven inches high.

A corbel course will be carried up the pediment, of semicircular corbels, resting on neat brackets, and projecting eight inches from face of wall. The cornice or coping will be 12 inches by 28 inches, cut to the form of three sides of an octagon, and on the apex of the gable a handsome finial will be cut the size shown on plan, and of approved design.

Two base courses or water tables will be carried around the whole building, with the exception of the east wing. They will be cut to the dimensions and section directed by the architect.

Central front towers.—On all the corners of all the buttresses, which will be of rubble masonry, an arras two inches wide each way will be cut, so as to enable the stones to be set perfectly vertical, plumb, true, and even.

Buttress caps.—All the buttress caps to be of cut stone, handsomely moulded and finely cut, per directions of architect.

The first row of corbels under zigzag mould will be of good design, eight on each side of each tower, well moulded and cut with foliage and heads.

An enriched lozenge or zigzag mould will be cut of dimensions shown on plans, sunk six inches between the panels, and of such pattern as the architect shall direct, and cut in the best manner.

Sills of first tier of windows, and niches, and sill course.—Over the zigzag an octagonal sill course six inches high will be carried. Sills of windows will be 10

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inches high. Jambs of first tier of windows will consist of a splay and column, (see plan A, No. 7.) Arches of splay and octagon, (see plan A, No. 8.) A label resting on corbels will be carried around the heads of the windows and niches. The mullions will be cut to the form of a double jamb, with a fillet between them, (as shown in Nos. 8 and 8.)

The bases, plinths, and capitals, will be furnished for all the columns of such design as architect shall direct, and they shall have foliage caps well undercut.

In the arches the column will be replaced by a square with a bead on the angle, or by an octagonal mould, (see plan No. 9,) and the remainder of the arch shall be the same as the section of the jamb.

Corbel courses over the first tier of windows.—A handsome corbel course, with moulded corbels under the arches, shall run all around both towers, (see Nos. 10 and 11,) and project from six to eight inches; a moulding shall run over the head of the corbel course, with a batter on top to shed the rain.

Between the corbel course and the band under the second windows a panel course, well sunk, (see plan A, No. 12,) will be carried around both towers, of such design as architect shall direct.

The sill course under the second windows will be a semicircle and fillet, and five sides of an octagon, of the height shown on plan, and finely cut.

The sills of the second tier of windows, will be 15 inches in thickness.

The jambs, arches, labels, plinths, bases and caps, will be of the same section as those of the first tier; they will be finely patent-hammered or well cut, and of such dimensions as to section as the architect shall direct.

Corbels over second tier of windows.—On each side of each tower, nine or ten corbels or modillions of good design, handsomely moulded, will be placed, and of such size as architect shall direct. These corbels will support an octagonal moulding, well cut, and of such dimensions as architect shall direct.

The sill course of paneled arcade, over this octagonal moulding, will be of such dimensions and section as architect shall direct.

A paneled arcade of seven to eight arches, supported by pillars, with plain caps and bases, will be carried along two sides of each tower—82 panels in all; they will be sunk of such depths as the architect shall direct.

Moulding over arcade and splayed sill course.—Over this arcade a label mould with a splayed sill course, having in it one break and being a continuation of the buttress caps, will be carried around three sides of each tower, of such dimensions and section as architect shall direct.

Above the sill course, the sills of the upper windows, which will be 15 inches high and of such section as architect shall direct, will be carried. They will be well cut.

Windows, third tier.—The third tier of windows will vary in the two towers per plan; there being a double window on each of the four sides of the larger tower, and a triple one on each of the four sides of the lower tower. The section of all the jambs will be as shown on plan A, Nos. 7 and 8, and they will be of such dimensions as the architect shall direct. All the columns of all the above jambs will have plinths and bases of good designs and foliage Norman caps, approved by architect. The arches will have the same section as the jambs, except over the pillar caps, where the circular shaft will be replaced by an octagonal moulding.

Finish of lower central front tower, above third tier of windows.—1st. A corbel course projecting 10 inches from the face of the wall, of semicircular corbels, supported on brackets, will be carried all around the four sides of the tower. Over this an octagonal moulding; over this a zigzag or paneled moulding, of such dimensions, pattern, and workmanship as architect shall direct, well sunk; over this zigzag or paneled moulding, an octagonal moulding—then a vertical band; over this band a circle; and over this a cove, with an octagonal or splayed top for the cornice or coping.

All the above mouldings to run all round the four sides of the tower, and to be of such dimensions, workmanship, and design, as architect shall direct. The upper bed of the upper stone or coping will be at least 30 inches, with a groove sunk one inch all round, to secure the roofing material, to prevent all leakage.

Finish of larger front tower above the third tier of windows.—Four circular windows for clock faces, one on each side of the tower, of a diameter not exceeding nine feet, will be placed over each set of double windows. The jambs will be of the section shown on plan A, No. 14, and in the mouldings the numbers of the hour

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will be cut. The windows will be filled with handsome Norman tracery of pillars, and semicircular arches of such dimensions, &c., as architect shall direct.

Splayed corners.—Above these circular windows the tower changes the form of its ground plan from that of a square to that of an octagon, by means of four splayed corners, (per plans;) these corners will be of coursed cut stone, well cut on the beds, builds and faces, 12 inches high in each course, and having a drip mould cut on the under side of each stone to prevent the water from getting into the joints.

An octagonal moulding will be carried all around the base of the octagon at the point where the splay ceases. This moulding will be fine cut, and not less than 12 nor more than 16 inches in height.

Pinnacles.—An octagonal moulding of similar dimensions to the one above will be carried all around the top of the 16 buttresses of the principal tower; and on each of the buttresses an octagonal or cross-shaped pinnacle, having a plinth, pillars with caps, bases, and arches, and mouldings. Arched panels, corbels, and mouldings of such dimensions, design, and workmanship, as the architect shall direct. The pinnacles will be each capped by a single stone, having the form of an octagonal pyramid, of such dimensions as architect shall direct, surmounted by a handsome finial. All the above work to be cut in the best manner.

A sill course of octagonal form will be carried around the whole tower, under the sills of the fourth tier of windows, of such dimensions as architect shall direct. Sills of the windows of the octagonal section will be fifteen inches in height, and of such depth as may be directed by architect.

All the windows of the octagonal section will have jambs of such section as architect shall direct, and detached columns not more than 12 inches lesser diameter, of oval form, will divide the windows into two bays.

The columns of the jambs and the central columns, or mullion, will have plinths and bases of good design, and ornamented Norman caps, of such dimensions and pattern as may be approved by architect. The splay of the jambs will be continued around the arches; the tracery of the window heads will be sunk through single stones of not less than nine inches in thickness; the arras of the arches will be splayed, and the quatrefoil over them will also be sunk through, and the whole will be fine cut, per direction of architect.

All the corners of the octagonal section of the tower will leave an arris drawn on them, so that they will be perfectly plumb, true, and even, in every respect.

A corbel table will be carried around the octagon over the arches of the fourth tier of windows, per plans, with handsome brackets neatly moulded under semicircular arches, which will project from 10 to 12 inches.

Over this corbel table a splay fillet and octagonal moulding will be carried to the under side of the ornamental band, of such dimensions and workmanship as the architect shall direct.

Over this octagonal mould an ornamented course, having a zigzag chevron, or a star or enriched lozenge or triangular frette, of such dimensions and pattern as architect shall direct, and well cut, will be carried.

Above this a series of six mouldings, of such dimensions and pattern as the architect shall direct, and terminated by an octagonal moulding 16 inches high and 30 inches bed, for a cornice, with a rabbet to receive the lead connecting the roof covering with the stone, will be carried.

Parapet of tower.—A parapet, 3 feet 6 inches in height, with a moulded base and octagonal coping, will be carried all around the top of the tower, over the cornice. All the stones between the base and coping will be 15 inches thickness of bed, and fine cut on both faces and both beds, as will the coping and base. The whole to be of such proportions as the architect shall direct.

The buttresses of both central front towers will have an arris or draught, fine cut, drawn on all the corners, so that they will, when laid, be perfectly plumb, true, and even.

All the mouldings, buttress caps, base courses, and, in general, all the ornamental work on the buttresses, will be well cut, and of such dimensions and design as architect shall direct. And all the work on both front towers, the porch and space between the towers, to be cut and furnished, whether specified or not.

In each of the walls between front towers and main building, there will be a door four feet six inches opening, and ten feet six inches high in the clear. Their jambs and arches will be of the following section, (see plan A, No. 18,) and well cut, and the columns will have bases, plinths, and foliage. Capitals of such design as may be approved of by the architect. The bands and corbel courses, and battlements of

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the front of the central buildings, hereinafter described, will be continued along these walls to the rears of the central front towers, a total length of 14 feet each.

Windows.—In each of the above spaces there will be three windows, averaging 18 feet high, and four feet broad in the openings, with arches and jambs of section (plan A, No. 17) well and truly cut, and of such dimensions as architect shall direct.

Cut stone in front and rear of central building.

Two bases, their courses of section described, will be carried around both of the fronts and buttresses.

Buttresses.—The corners of all the buttresses will be dressed with a draught or arris, so that they will be perfectly plumb, true, and even, when laid.

Buttress caps will be gable-shaped, and project one foot to sixteen inches from the corbel table behind them. They will be well and truly cut, with a circular bead on the apex, and of such dimensions, &c., as architect shall direct.

Band under windows.—Under the first tier of windows a moulding, consisting of a splay, or cove, a fillet, and an octagonal moulding, of such dimensions as architect shall direct, will be carried.

The window-sills of the first tier of windows will be 10 inches high, well cut, with a rebate to receive the sash.

The jambs of the windows will be cut to the form of a splay and column, in a rebate, and of such dimensions as architect shall direct. All the columns to have plinths and bases, handsomely moulded, and foliage Norman caps of such design as architect shall approve.

The arches of the windows will be of the same section as the jambs, with the exception that the circular moulding, or shaft of column, will be replaced by an octagonal one.

Labels resting on ornamental corbels, of handsome design, will be carried over the heads of all these windows.

A corbel table of semicircular arches, supported on handsomely carved drops, will extend from buttress to buttress, along the whole front and rear. The projection of this corbel table will be from eight to ten inches.

The octagonal sill-course under the sills of the second tier of windows, will be cut to such dimensions as architect shall direct.

The sills of the second tier of windows will be from 16 to 18 inches in height, and cut per plans and directions of architect.

The window jambs will be cut to the form of a splay and octagonal, or oval column, in a rebate, of such dimensions as architect directs.

The columns in the centre will be of the same shape as those of the jambs, and of such dimensions as architect shall direct. All the above columns to have plinths, bases, and foliage capitals, of such design as architect shall direct.

The splay of the jamb will continue around the arch, and a handsomely moulded label, with two carved foliage corbels, will be carried around the arches. Tracery will be of the form shown on plans, at least nine inches thick, and moulded on all the edges. The space between the pointed arches of the tracery will be sunk two inches on both sides from the face of the arch, and a trefoil will be sunk through it, if so directed by architect.

A corbel course of large size, projecting from 15 to 18 inches from the face of the walls, will be run all along both front and rear; the corbels will have semicircular arches, supported by handsome moulded drops, and will be of such dimensions and design as architect shall approve.

Over the corbel table a moulding, consisting of a splay and fillet, will run all around, if so directed by architect. This moulding is not shown on plans.

Above this line the battlements will be carried along the whole front and rear of the building. The battlement will be well cut; and where it is above the roof, will be 16 inches in thickness, and cut on both sides. The coping of the battlement will be cut to the section shown in plan A, No. 16, and of such dimensions as architect shall direct, and the battlement shall be 18 inches higher than shown on plans.

All the remaining cut work, and stone therefor, necessary to finish completely the front and rear of the central building, will be furnished by the contractor, whether specified or not.

East end of central buildings.—The band under the windows will extend along the whole end of building, between the towers, and will be cut to the form of five sides of an octagon, of such dimensions as architect shall direct.

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Buttress corners will have an arris drawn up them, as before described, for front and rear.

Triple window.—The triple window will have a sill 15 inches in height, and of such other dimensions as architect shall direct.

The jambs and intermediate jambs will be of the section shown on plan B, No. 1, and of such dimensions as architect shall direct.

All the columns in the jambs to have plinths and bases, and capitals, with Norman foliage. The arches will be of the same section as the jambs, with an octagonal moulding, taking the place of the shaft of the column. A label mould, of the form of five sides of an octagon, will be carried all around the heads of the three windows, from the level of the caps of the columns of the side windows, and four handsomely carved corbels will be carried on the level of these caps, from which the label will spring.

The smaller end windows will have sills, jambs, arches, bases, capitals, plinths, corbels, and labels, of the same section as the triple window.

Corbel course.—Along the whole end, and its gable, a handsome heavily-sunk corbel table, of semicircular arches, springing from handsomely-carved brackets or drops, will be carried. It will project from 12 to 15 inches from the face of the wall.

Coping.—An octagonal coping, at least 15 inches high and 80 inches to bed, will be carried along over the whole end wall, with a proper groove for roof covering, sunk in build.

West end of main building.—A sill course of octagonal form will extend along the whole end between the towers.

The arris of buttresses, and arched panels over them, will be dressed perfectly true and even.

Circular window.—The jamb will be cut to the section, (plan C, No. 1.) The tracery will be cut on both faces, with columns, with plinths, bases, and caps, quatrefoils, six-foils, and trefoil, tracery heads and mouldings, of such design and dimensions as architect shall direct, and be complete in every respect.

A corbel course will be carried up the gable of the contre compartment, of such design, workmanship, and dimensions, as architect shall direct.

Two windows at sides of circular windows will be furnished with jambs, arches, &c., cut in same way as described for windows of east end.

The two small circular windows will have jambs of the section shown in plan C, No. 2.

The quatrefoil tracery will be eight inches thick, dressed on both sides, and splayed on edges.

A hook label mould will be carried along the whole end under the parapet.

The coping will be similar in every respect to that of east end. And all the above to be of such dimensions and workmanship as architect shall approve.

Towers of East end of Main Building.

CAMPANILE.

The campanile, a larger tower, will consist of four stories, or external divisions. The two base courses, hereinbefore described, will extend all around it.

The jambs of the doors will be cut to the section of two rebates, with one engaged column in one of them. And there will be four windows, (not seen on plan,) in the first story, with sills, splayed jambs and arches. A splayed water-table will be carried all around under the second story.

Second Story.—On each side of the second story there will be two panels, with arched heads, formed by buttresses, which will project from six to eight inches from the face. The corners of the tower buttresses and arches will be dressed perfectly true and even, so as to be perfectly plumb, when laid.

Windows.—In each of the panels there will be three windows with splayed sills, jambs and arches.

Cornice of second story will consist of a splay, or an ogee, a wide band, and an octagonal moulding, all cut in the best manner.

If the architect shall so direct, the splay or ogee shall be replaced by corbels.

Third story.—A base course, with splayed top, will run all around the tower.

The eight windows of third story will have sills ten inches in height.

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The jambs will consist of a splay and column in a rebate, and the mullions of a column on a pilaster.

The arches will be of the shape of a trefoil, of the same section as the jambs, and the tracery, with the splayed angles and panels, will be carried from capital to capital of the columns, per plans and directions of architect. All the columns will have bases, capitals, and plinths, handsomely carved and moulded.

Over the windows a corbel course of ten corbels or modillions, on each side of the tower, will be carried; the corbels will be handsomely cut and moulded, (not shown on plan.)

Over the corbels an octagonal moulding will be carried, of such dimensions as architect shall direct.

Fourth story.—A splayed base course will be carried all around the fourth story of the tower.

The window-sills of the eight windows of the fourth story of the tower will be 10 inches high. The jambs and centre mullions will be cut to the same section as those of the third story.

The tracery will be eight inches thick, splayed on corners with a quatrefoil pierced through each tracery head over the arches.

Over the fourth story there will be, first, a moulding consisting of a splay and a fillet. Over this a zigzag or chevron mould, well sunk; over the chevron a fillet, and an ovolo supporting a corbel course of semicircular arches on plain brackets, projecting from eight to twelve inches from the face of the wall.

The coping of the tower will be octagonal, 12 inches high by 24 inches bed, and grooved to receive the roof covering.

All the parts of the above tower including doors, buttresses, bands, corbels, mouldings, windows, &c., to be of the dimensions, workmanship, and design furnished by architect.

Smaller tower of east end.—Base courses to be carried all around.

The tower will consist of three stories externally; the lower one being square, and the two upper ones octagonal.

First story.—A sloping base, eight inches high, will extend along the bottom of the panel, between the buttresses on each side.

The sides of the first story will each have a panel with circular head, formed by buttresses and arches, projecting six inches from the face of the wall, and all the angles of the tower and buttresses will be dressed perfectly true and even.

Windows.—On each side of the first story there will be two windows, with splayed sills, jambs, and arches, which will be well and truly cut.

An octagonal moulding will be carried around over the top of the first story.

Splays.—The square of the first story will be gradually drawn into an octagonal form by four splayed corners, which will be of cut stone, with drips on under side, of same character and workmanship as described for the main central tower.

Windows of the second story will have sunk jambs and arches, cut perfectly true and even.

A hook label moulding will be carried around the top of the second story of the tower. The parapet or broad band over this story will be of cut stone. A splayed coping will be carried over the parapet and under the third story.

An octagonal sill course will be carried around the tower under the window sills of the third story.

The window sills of the third story will be eight (8) inches in height.

The jambs and arches of the windows will be splayed, or of the section of a rebate, with an engaged column; all the corners of the tower will be cut perfectly true and even.

A corbel course will be carried around the tower, forming the first member of the cornice; it will be of semicircular arches, supported by plain brackets, and will project eight inches from face of tower wall. Over this corbel cornice a splay moulding will be carried. And over the splay the cornice will consist of five members of such design and dimensions as architect shall direct. The top bed of the upper member or coping shall be two feet wide, with a groove cut to attach the roof covering.

All the parts of the above tower to be of such workmanship, dimensions, and design, as the architect shall direct.

Towers of west end of main building.—Octagonal towers of southwest corner will consist of four stories externally.

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The two base courses will be carried around the first story. Above the base courses
first story will be battered, per plans, and all the corners will be dressed so as to
perfectly true and even. A splayed water table will finish the first story.

Second story.—All the corners will be dressed true and even, so as to be perfectly
mb, when laid.

Windows.—There will be two windows in each side with splayed sills, jambs, and
hes.

Loop-holes.—There will also be one cross-shaped loop-hole in each side, sunk
rough the walls and cut perfectly true and even, with trefoils on the ends of the
ns.

A hooked label mould will be carried around the tower, and well cut. The para-
t of the first story, over the label, will be a broad band of cut stone, finished on
with a splayed coping.

Third story—The base or sill course of the third story will be well cut and splayed
upper edge.

The windows of the third story will form a continuous arcade all around. The
nbs and the centre mullions will be cut to section shown on plan D, No. 1.

All the columns will have plinth bases and foliage Norman caps. The section of
e arch will be same as that of jamb, except that a square or octagonal moulding
ll take the place of the shaft of the column. The tracery will be eight to ten
ches thick, the arches will be raised, and over them a quatrefoil pierced through
e panel in the head of each tracery.

A corbel course of small moulded corbels, seven on each side of the tower, well
t, will be carried around under the cornice of the third story. The cornice of the
ird story will be octagonal and well cut. The whole story will be eighteen inches
gher than shown on plan.

Fourth story.—The base course will have a splayed top mould or water table on
hich the window sills will rest.

The window sills will be six inches high. The windows of the fourth story will
so form a continuous arcade. The jambs will be cut to the section shown on plan
, No. 2, and the arches will be of trefoil form, and cut per directions of architect.

ll the columns will have plinths, caps, and bases of good design.

A hook label mould will be carried around under the parapet.

The parapet will contain two sunk panels on each side, each of which will be of
andsome Norman pattern, of such design as may be approved by architect. The
arapet will be sixteen inches thick, and dressed on both sides, and will be coped by
coping twenty inches bed, cut to the section shown on plan D, No. 3.

A balustrade of columns, with caps, bases, arches, &c., will fill the spaces between
e jambs of the windows of fourth story, per end view.

The northwest corner tower will be divided externally into three stories.

The first story will be similar to that of the southeast corner tower.

The second story will be square with splayed corners, handsomely cut; it will rise
om a splayed base mould, and have two windows with rebated jambs on each side.

he cornice of the second story will be a hook label mould, over which will be a
lain parapet, with splayed coping well cut.

Third story.—The base course will be well cut, with a splayed top.

Windows.—There will be four windows, with sills 10 inches high, well cut. The
mbs and arches will be a splay and column in a rebate, with handsome plinths,
aps, and bases. The centre mullion will be a column on a pilaster. The tracery
ill be eight inches thick, with raised arches, and a quatrefoil pierced through the
anel in the head.

In the gables over the windows a sunk quatrefoil panel will be cut.

The coping will be a hook label mould, 18 inches bed, grooved as usual to receive
he roof covering, and a neat finial will be cut for each gable.

Central rear tower.—The two base courses will be carried all around the buttresses,
&c. All the corners of all the buttresses will have an arris run along them. All the
nouldings and buttress caps will be cut in the best manner, and of most approved
lesign.

Door.—The door jambs will be of the section of four rebates, containing four
letached shafts or engaged columns, having bases and plinths handsomely moulded,

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and capitals cut in the best manner, with Norman foliage, well sunk and undercut, (see plan D, No. 4.)

The arch will have four Norman mouldings, two of which will be ornamented with a chevron and cable mould, (see plan D, No. 5.)

A label of octagonal form, and ornamented on the lower face with a Norman leaf, will be carried over the arch of the door, and will spring from two foliage corbels of best design and workmanship.

Bay window.—The bracket of the bay window, which will project not less than six feet six inches from the face of the wall, will consist of a series of mouldings rising from a large carved corbel. All the face work of the windows between the corbel and the sills will be well cut in both faces and both beds, to a thickness of 13 inches.

An octagonal sill course will be carried all around the tower on a level with the under side of the sills of the bay window. The window sills will be 10 inches high, cut in the best manner.

All the face work of the bay window above the sill course will be fine cut.

There will be three windows, one on each side of the bay. The jambs and mullions will be of the section shown on plan D, No. 6.

All the pillars will have plinths, bases, and foliage caps. The arches of the tracery will be raised, and a quatrefoil will be pierced through the sunk panel over them. The tracery will be nine inches thick. The arch of the window will be of same section as the jamb, except a square will take the place of the shaft of column. Over the windows a double label mould will be carried all around the bay window, and above this line there will be a battlement cut in the best manner, and of good design. The battlement will be cut on both sides.

Sides of first story of tower.—On each side of the small octagonal tower a window with splayed jambs, arches, and sills, will be cut, and two similar windows will be placed on the opposite side.

On each side of the octagonal tower in the second story a window with rebated jambs, having each an engaged column, will be cut in the best manner; and there will be two similar ones on the opposite side of tower, between which a niche, having a foliage corbel and canopy, cut in the best manner, will be placed.

A hook label mould of large size will be carried all around the top of the second story, and well cut.

Third story.—The base course of the third story will be splayed on upper bed, and well cut.

The front and rear will each contain a single large window, having a jamb with the section of a splay, and engaged column in a rebate, and a mullion or central column supporting tracery. The tracery arches will be raised, and a quatrefoil pierced through the sunk panel.

Over the arch of the window there will be an octagonal label resting on two handsome corbels, which will be well cut. All the columns to have bases, plinths, and foliage caps.

The sides of the third story will each be pierced by two windows, having splay and column in a rebate for the jambs and arches.

Battlements, &c.—The machiolations under the battlement will project two feet from the face of the wall, and will be formed of semicircular arches, springing from moulded corbels; above these will rise the battlement, well cut on both sides, 20 inches in thickness, and coped with a heavy moulded coping; (per plan of architect.)

The octagonal stair tower attached to the above will have cross-shaped loop-holes and slits to light the stairs from top to bottom. All the mouldings of the main tower will be carried around it, and it will be finished at the top by a battlement with cross-shaped loop-holes. A door for entrance, with plain rebated jambs, will be placed in one side of this tower on the level of the ground, with proper sills, &c.; and all the corbels and other mouldings of the tower will be well cut.

East connecting range—cloister.—The front of the cloister will be a continuous arcade of six arched openings filled with mullions and tracery. The section of the jambs and mullions will be as shown on plan A, No. 15.

All the columns will have plinths and bases handsomely moulded, and foliage capitals of best description.

The tracery in the heads will be nine inches in thickness, with raised arches, and the panels over these arches will be pierced with quatrefoils. An octagonal label resting on handsome corbels will be carried over the arches.

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The cornice will consist of a corbel table of semicircular arches resting on moulded corbels, projecting at least 10 inches from the face of the wall. The coping will be octagonal, 18 inches bed, with grooves, &c., as usual. The arches of the cloister will rest on a sill 12 inches thick, and 30 inches bed. Underneath the sills an octagonal moulding will be carried.

There will be six small windows with played jambs, one under each of the above arches, to light the basement, and two base courses, as usual.

North front of connecting range behind cloister will be finished with eight windows, with jambs and arches of section of a rebate with engaged column or a splay, and of same dimensions as those of the south side.

South front of connecting range will consist of seven bays, divided by buttresses projecting 8 to 12 inches from the walls.

The two base courses will be carried all around the buttresses and walls.

An octagonal sill course will be carried along under the windows. The sill of the windows will be six inches high. The section of the jambs and windows will be of a rebate and engaged column or a splay, with bases, plinths, and capitals to the columns. The arches will be of same section as the jambs, with an octagonal moulding instead of the shaft of the column. Over the heads of the windows an octagonal label mould rising from two moulded or foliage corbels will be run.

A corbel course, projecting from 10 to 12 inches from the face of the wall, will be carried from buttress to buttress. The corbels will consist of semi-circular arches rising from moulded dentils. The coping will be octagonal.

A small window with splayed jambs, sills, and arches, will be cut for each compartment, and they will be placed underneath the windows above described.

Above the coping there will be a battlement three feet high, with openings for windows alternating with carved panels. This will be coped with an octagonal coping of 18 inches bed, with a groove for the roofing material cut in it. This is not shown on plans.

East wing.—The basement of the east wing will be battered, per plans.

Windows.—There will be 14 windows in the basement, with splayed or rebated jambs, sills, and arches.

The basement will be coped with a water table 12 inches in height, splayed on the upper bed.

Windows front and rear of wing.—An octagonal sill course will extend along the front and rear under the window sills. The window sills will be nine inches high.

The jambs of the windows will be a splay and engaged column in a rebate, with a mullion, as hereinbefore described, and tracery in the head with raised arches and pierced quatrefoil, and an octagonal label mould will be carried around each arch, resting on two handsome corbels. The plinths and bases of the columns and foliage capitals will be well cut and moulded.

A porch, with four steps of 7 inches rise by 12 inches tread carried all around it, will serve for the east entrance to the wing. A water table with splayed top bed will extend all around the porch.

The door jamb will be cut to the section of a splay, and engaged column in a rebate, with plinths, bases, and foliage caps. The arch will be well cut, and a label will be carried around over the arch, resting on two handsome corbels.

The cornice will consist of 16 corbels or dentils, handsomely moulded, supporting a well-cut parapet, surmounted by an octagonal coping of 16 inches bed.

The *vestibule* will have a water table similar to that of the porch carried round it; over the porch will be a window with a jamb of the section of a splay and engaged column in a rebate, with a centre mullion, tracery with raised arches and pierced quatrefoil, and an octagonal label mould resting on two corbels, all cut in the best manner, with plinths, bases, and capitals, as hereinbefore described. The window sill will be eight inches in height. On each of the sides of the vestibule will be a double window with splayed jambs, and arches, and sills. An octagonal label, resting on three plain corbels, will be run around the arches.

A corbel course, projecting from 8 to 10 inches from the face of the wall, will be carried all around the sides and gable of the vestibule. It will consist of semicircular arches resting on handsome moulded brackets. The cornice will be octagonal, 18 inches bed, and a handsome finial will be cut and placed on the apex of the gable.

East and west sides of east wing will be finished precisely alike, except where the west side is covered by the connecting range, and with the exception of the central bell tower, which will be only on the east side. The interlaced arches will be carried through the west side from chimney to chimney.

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The ten small windows, on each side above water table, will have splayed jambs, arches, and sills.

The four large triple windows will have sills eight inches high. The jambs and mullions will be of the section shown on plan E, No. 1.

The columns of the jambs will have plinths, bases, and foliage capitals; and from the abacus of the capital an octagonal label mould will be carried around the head of the windows.

Chimneys.—Six chimneys springing from handsomely moulded brackets, and projecting two feet six inches from the face of the wall, with splayed corners well cut, will be carried from the water table to the height shown on plans. They will have octagonal mouldings, splayed cornices, and pierced windows, with battlemented tops of dimensions and workmanship directed by architect.

Interlaced arch.—Between the chimneys on the west side, and between the bell tower and the chimneys on the east side, an arcade of interlaced Norman arches, resting on handsome columns with neat plinths, bases, and capitals, and 18 inches higher than shown on plans, and cut in the best manner, will be placed. The arcade will rest on an octagonal sill course, supported by handsome moulded corbels or dentils, and will be capped with a heavy hook label moulding, with an 18-inch bed grooved to receive the roofing.

Bell tower will be carried up plain to the height shown on plans, with the corners cut true and even, and with two roll mouldings projecting from the north and south sides.

A corbel course of plain corbels will be carried around the top of the first story.

The coping of the first story will be a fillet and splay eighteen inches in thickness.

The base course of the second story will be splayed on its upper bed, and well cut.

The corners of the tower will be splayed.

The window sills will be eight inches high.

The window jambs will be cut to the form of a splay and column, with plinths, base, and capital.

The arch will be of same section as jamb, with a square moulding, taking the place of the shaft of the column, and around the arch a label, rising from neat corbels, will be carried.

The cornice will be a splay and fillet, and will be coped by a plain coping, per plans.

Battlement of Ends, &c.—The machiolations under the battlement will overhang the walls two feet six inches. They will consist of semicircular arches, resting on handsome moulded corbels. Above this the battlement will rise; and where it is above the roof, it will be dressed on both sides, and sixteen inches in thickness. The battlement will be coped with a handsome moulded coping.

Western connecting range—cloister.—The cloister will consist of three compartments, divided by buttresses, each containing a triple arched opening.

The two base courses will be carried along the front. In the basement seven small windows will be cut, with splayed sills, jambs, and arches.

An octagonal sill course will be carried under the sills of the cloister, with a bed and build of at least twenty-four inches, grooved to receive lead.

The buttresses between the triple arches will be well cut, and project eight inches beyond the walls above the arches. The pillars supporting the arches will be well cut, and will have plinths, bases, and handsome foliage caps, cut in the best manner. The arches will be of the section of a rebate and splay, and well cut on both sides.

A corbel course of semicircular arches, projecting eight inches from face of wall, resting on handsome moulded drops, will be carried between the buttresses.

The cornice will be octagonal, well cut, with a bed of at least eighteen inches, grooved as usual.

The front of the connecting range behind the cloister will have windows cut similar to those of the south front.

The south front will be divided by buttresses into seven bays. The two base courses will run along the whole front. Seven small windows with splayed jambs, sills, and arches, will be cut for the basement.

An octagonal sill course will be carried under the sills between the buttresses.

The window sills will be seven inches high.

The jambs, arches, and labels of the windows will be cut in the same manner as those of the eastern connecting range.

The corbel table, between the buttresses and the coping, will also be cut in the same manner as those of the eastern connecting range.

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Clerestory.—The inside columns, shown on ground plan, supporting the clerestory, ill be of granite, rough cut, and twelve inches square, with a skew back on each, ith a top bed of 18 by 36 inches to receive the arches which support the clerestory.
The clerestory will be divided by buttresses, projecting six inches from its face to seven bays, and in each bay there will be a double or triple window, with splayed mbs, arches, and sills.
A corbel table, projecting six inches from the face of the wall, of semicircular ches, on plain moulded brackets, will be carried between the buttresses. The cop- g will be octagonal, 8 by 18 inches, with a groove, as usual.

West Wing.—The bell tower will be divided into four stories, externally.
The first story, the door jamb and arch, will have a plain splay and engaged col- mns in a rebate.
Two small windows, with splayed sills, jambs, and arches, will be cut for the sides ! first story.
The water table, under the second story, will be splayed on its upper bed.
The second story will have paneled sides, with semicircular heads, formed by the ittresses and arches, projecting from six to eight inches from the wall. All the rners of the tower, buttresses, and arches, will be well and truly cut. In each de of this story, there will be two small windows, with splayed sills, jambs, and ches.
Under the coping of the second story, a corbel course of nine handsomely moulded rbels or dentils on each side of the tower, will be carried.
The octagonal coping will be well cut.
The base course and water table of the third story of the tower will be well cut.

Windows of third story.—The four windows of the third story will have sills seven ches high.
The jambs will be of the section of a splay and engaged column in a rebate, with ndsomely moulded plinths, bases, and foliage caps.
The tracery will be a trefoil head, well cut, and eight inches thick. The arches ill be splayed, and an octagonal label resting on two handsome corbels will be car- ed round the arches.
A corbel course of 44 corbels will be carried around the third story under the ping, which will be octagonal.
The base course and water table of the fourth story will be well cut.
The windows will have sills eight inches high.
The jambs of the four windows will be a splay and engaged column in a rebate. he mullion will be a column, all with plinths, caps, and foliage bases.
The arch and tracery will be well cut, and an octagonal label resting on two corbels ill be carried around the arch of each window.
The cornice will consist of five mouldings:
1st. An ovolo or ogee moulding.
2d. A zigzag or chevron, deeply and well cut.
3d. A splay.
4th. A corbel course of semicircular arches, resting on foliage corbels and projecting om eight to twelve inches.
5th. A hook label mould for the coping, 15 inches high, and 18 inches lower bed, ith a groove, &c.,

Apsis, or semicircular projection.—The apsis will be divided by eight buttresses, rojecting eight inches from the face of the wall, into seven bays.
The upper base course or water table will project eight inches.
A sill course of octagonal form will be carried around under the sills between the uttresses.
The sills of the windows will be seven inches high.
The jambs and arches will be a plain splay, or a rebate.
In each bay, between the buttresses, there will be a corbelling of two semicircular rches, rising from the sides of the buttresses, and supported by a handsomely-carved nd moulded corbel in the centre.
A corbel course of handsomely-moulded corbels, or dentils, will be carried all round under the octagonal coping of the first story.
An octagonal coping or cornice will be carried all around over the first story of he apsis.
Base course of second story will be a plain band, splayed on upper edge to shed ater.
Over this and under the columns a stylobate of cut stone will be carried, from

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eighteen inches to two feet in height, well cut on the upper surface, between the column bases, to form the sills of the windows between the columns.

An arcade of columns and arches, having 14 arched openings, will be carried round the second story of the apsis.

The columns will have plinths, bases, and carved capitals, and will be detached entirely from the wall behind them. The wall behind the column will consist of pilasters, with plain bases and capitals.

The pilaster will project eight inches from the face of the sash. The arches will be of the section directed by architect, and will be cut in the best manner.

The face work over the arches will be set back three inches from the face of the arches, and well cut.

A corbel table, of semicircular arches, resting on moulded brackets, will be carried all around the apse, under the coping, (not dentils, as in plan,) and will project from eight to twelve inches from the face of the wall below.

The coping will be octagonal, 12 inches by 24 inches, well cut, and grooved to receive roof.

The wall behind apse will have a label course run across it, on a level of the top of the roof of the apse.

Circular windows.—The jamb will be of the section directed by architect, and well cut.

The tracery will be 18 inches in thickness, exclusive of the columns on the face.

The quatrefoils and six-foil will be pierced through, and well and finely cut.

The columns will have plinths, bases, and caps, well cut and moulded. The moulding on which the columns rest will be octagonal, and well cut, and all the remaining work of the window will be cut in the best manner.

Cornice of gable will consist of a splay, with a double billet-mould, a band eighteen inches wide, well cut, and an octagonal coping 12 by 24 inches, grooved to receive the roof covering.

A handsome finial will be well cut, and for the apex of the gable.

Buttresses will be cut with base courses, buttress caps with mouldings, and arres on the corners, cut in the best manner.

South front of west wing.—Base courses will be carried across the front, of size, &c., hereinbefore specified.

Two small double windows, with splayed jambs, sills, and arches, will be cut for each side of the door-way.

The porch will project one foot from face of wall; all the arres will be well and truly cut.

The door will have a jamb of the section of a splay and an engaged column in a rebate, and will be 18 inches in depth, to the front of the door, and 24 inches depth in all.

All the columns of the door will have plinths, bases, and foliage caps. The arch will have an octagonal mould, in place of a shaft of column. Over the door, the quatrefoil will be well cut and deeply sunk. The coping will be cut to the form of an octagon, 8 inches high by 24 inches bed, well cut.

The water table over the basement will be well and truly cut, and handsomely splayed.

Over the water table, the sill course under the windows will be carried from buttress to buttress, and will be well cut to the form of five sides of an octagon.

The sills of the windows will be 12 inches in thickness.

The jambs of the windows will be cut to the form of a splay and engaged column in a rebate.

The centre columns or mullions will be well cut, and all the columns will have plinths, bases, and foliage capitals, well cut.

All the tracery will be 19 inches thick, the arches will be raised, and a quatrefoil will be pierced through the sunk panels of the tracery heads. There will be three windows in the east front.

Circular windows.—The jambs will be splayed.

The tracery will consist of columns, with handsome plinths, bases, and caps, with trefoil arches between the columns; the spaces on the backs of the trefoil heads will be paneled; the thickness of the tracery will be eight inches. The moulding under the bases of the columns and the central quatrefoil will be well cut.

A corbel table will be carried up under the cornice of the gables, or semicircular arches resting on moulded brackets, and projecting 10 to 12 inches from the face of

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the wall. The coping will be 12 by 24 inches, cut to the form of five sides of an octagon.

A handsome finial will be well cut for the apex of the gable.

The buttresses will have the corners well and truly cut, with moulded caps, finished in the best manner.

Sides of west wing.—The east side of the west wing will be finished in precisely the same manner as the west side, except so far as it is covered by the connecting range.

The base courses will be carried all around.

There will be six small windows in the basement, with splayed jambs, arches, and sills.

The water table will be carried all around over the basement, per directions of architect.

The buttresses projecting eight inches from the face of the walls, and connected with arched heads, will be carried up perfectly plumb, true, and even, and all the arres of the buttresses and arches will be well and truly cut.

Sill course under the windows will be cut to the form of five sides of an octagon.

The sills will be eight inches in thickness.

The jambs and arches of the windows will be splayed or rebated.

A corbel course will be carried all around both sides of the building, of large semi-circular arches, supported on foliage brackets. The corbelling will project from 10 to 12 inches from the face of the wall.

The coping will be 12 by 24 inches, cut to an octagonal form, with a groove to receive roofing material.

The walls connecting the central rear tower and the main central buildings will be cut with doors, windows, arches, corbel courses, mouldings, and battlements, precisely similar to those hereinbefore described; connecting the central front towers with main central building.

GENERAL SPECIFICATIONS.

All the window sills will be splayed.

All the doors will have sills and steps of the size, rise, and tread, directed by architect.

All the door and window sills will be well patent-hammered, and brought to a joint not exceeding $\frac{1}{16}$ of an inch. All the jambs and arches, with the labels over them, will be fine cut and patent-hammered, and no spauls will be allowed on their faces. In the jambs and arches of the principal doors, the joints shall not exceed $\frac{1}{16}$ of an inch. In the jambs, arches, &c., of the remaining doors, and of all the windows, the joints shall not exceed $\frac{1}{8}$ of an inch. In all the capitals of all the columns the foliage will be well relieved and truly cut, and the plinths of the columns will be in some cases octagonal, and in others circular and square, and well cut.

All the bands and mouldings will be well and truly cut, or rubbed.

All the ornamented bands and mouldings will be well relieved, and truly cut, or rubbed.

All the moulded and ornamented corbels will be cut in the best manner. The foliage will be well relieved.

And all the battlements, labels, buttress caps, and all the remaining cut work, will be executed in the most true and perfect manner.

All the cut work hereinbefore specified, of every description, will be of the form and dimensions and according to the plans furnished by the architect.

Contractors are referred to the following architectural works for the character of the different mouldings, capitals, and other ornaments, used in the building.

Doors, windows, and cloisters.—For capitals, bases, and plinths, see Moller's Denkmahler, part I, plate VI. Door of cathedral of Mayence, (A,) plate IX. Details of columns, cathedral of Mayence, (B,) plate XI. Door of church of St. Leonard at Frankfort, (C,) plate XII. Door of the sacristy of the cathedral of Mayence, (D,) plates XIV, XV, and XVI. Details of the cloister of the church of Aschaffenburg, (E,) plate XVII. Details of the church of St. Paul at Worms, (F,) plate XVIII. Details of the doors of the transept at Frieburg cathedral, (G.)

Also, Pugin and Le Keux's Normandy, plate V.

Also, Glossary of Architecture, plate 28; St. Nicholas, Caen, and St. Peter's Northampton.

For corbel courses.—See Pugin and Le Keux's Normandy, plates 1, 10. Then Church, plate 1, and Glossary of Architecture, plate 37.

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For ornamented mouldings.—See Glossary of Architecture, all on plates 76, 77, and 78. Plate 79—cable, intersecting and cable, nail-head, star, lozenge and enriched lozenge. Plate 81—reticulated, diamond frette, and embattled frette. Plate 82—trellis and hollow square.

The above references are made with a view of presenting to the contractor the general style for the finish and character of the ornaments.

As the above specification, with the plans, is intended to cover the entire completion of the building, in every respect, in the most perfect manner, no extra claims will be allowed, unless caused by actual alterations in the plans. And the contractor will be bound by the sum of $10,000 to submit all questions, controversies, and claims to the architect, whose decision upon the same shall be final and conclusive between the parties.

Specification of the Carpenter's and Joiner's Work for the Smithsonian Institution.

TIMBER.

Basement story.—The floors of the basement of the west wing, and west connecting range, will be supported on yellow pine timber, 8 by 12 inches, set two feet (2 feet) from centre to centre.

First story.—All the floors of the first story, except those of the chemical lecture-room, students' working laboratory, front towers, campanile tower, octagonal tower, and central rear tower, will be supported on 8 by 12 inch timbers, of the best white pine, set sixteen inches (16 inches) from centre to centre. The girders into which these will be framed will be twelve inches (12 by 12 inches) square. The trimmers and trimmer-beams will be 5 by 12 inches, and one trimmer will be placed at every hot-air flue, or one at every pier in the wall of the building. There will be one longitudinal trimmer in the west wing, one in the west connecting range, four in the library, three in the central hall, three in the lecture-room, and two in the east connecting range.

Second story.—The timbers in the floor of the second story will be 8 by 12 inches, set 16 inches from centre to centre. The girders will be twelve inches square, (12 by 12 in.,) running longitudinally through the museum. The trimmers and trimmer beams will be 5 by 12 inches. The timbers will be of the best white pine.

Towers, &c.—All the floors of the towers will be of the best white pine timber, 8 by 12 inches square. There will be seven floors in the higher central front tower; five floors in the lower front tower; four floors in the central rear tower; seven floors in the octagonal tower; seven floors in the campanile tower; five floors in the tower of the west wing; two floors in the porch of the chemical lecture-room.

The floor beams of the galleries of the museum, library, and lecture rooms will be 8 by 10 inches, of the best white pine timber, set 16 inches from centre. The girders of the gallery fronts, 8 by 12 inches.

All these timbers and girders will be firmly anchored to the walls.

All the floors in the building will have one row of herring-bone bridging of joists, 8 by 4 inches, for every 12 feet of length of beam.

Columns.—There will be 56 columns, six inches square and twenty-two (22) feet high in the library, set per plan.

In the great lecture-room there will be 10 columns of iron, twenty-seven (27) feet high. (Plan No. 1.)

In the museum there will be 120 columns, six inches square, and 27 feet high.

Roofs.—The roof of the central building to be framed with a tie beam, one king post, two queen posts, and four strutts.

The timbers in all of the frames will be of the following forms, dimensions, and materials:

Tie-beam, 6 by 15 inches, of the best white pine.
Two rafters, 6 by 12 inches, of best white pine.
King-post, 6 by 8 inches, of best white oak.
Two queen posts, 6 by 6 inches, of best white oak.
Four strutts, 6 by 8 inches, of best white pine.
The roof plate will be 8 by 12 inches, of best white pine.

The purlines will be of the best white pine timber, 8 by 10 inches, set three feet (3 ft.) from centre to centre, quartered into the rafters two inches, (2 in.,) and kept

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from slipping by brackets of white pine, eighteen inches (18 in.) in length, firmly fastened to the rafters.

The roof of the east lecture room will be framed in the same manner as that of the central building, of timbers of the same size and material. Its span will be forty-nine feet, (49 ft.) and the number of frames, seven, (7.)

The roof of the east connecting range will also be framed in the same manner, of timbers of the same size and material. The number of frames in it will be six, (6.)

The roof of the western wing will be framed in the same manner, and with timber of the same description, but of the following dimensions: tie-beam, 4 by 12 inches; rafters, 4 by 10 inches; king post, 4 by 8 inches; queen posts, 4 by 6 inches; strutts, 4 by 6 inches; purlines, 3 by 10 inches; set three feet (3 ft.) from centre to centre. The number of frames in the west wing will be six, (6.)

The roofs of the side aisles of the gallery of art, and of the cloisters in front of the two connecting ranges, will be framed according to section. (Plan E, No. 3.)

Tie-beam 3 by 8 inches, rafter 3 by 12 inches, strutt 3 by 6 inches, upright 3 by 6 inches, all of the best white pine timber.

There will be six frames in each side aisle and cloister.

The roof of the clerestory of the gallery of art will be framed of the following dimensions and materials:

Tie-beams, 5 by 12 inches, best white pine.
King post, 5 by 7 inches, best white oak.
Two rafters, 5 by 10 inches, best white pine.
Two strutts, 5 by 6 inches, best white pine.

The purlines will be 6 by 10 inches, set three feet (3 ft.) from centre to centre. The number of frames will be six, (6.)

The roofs of the square towers will be framed in the form of a flat hipped roof, with diagonal and square tie-beams, king post, strutts, rafters, and purlines, of the same materials as above, and of dimensions suited for their respective spans.

The roof of the octagonal tower will be framed in a similar manner.

The roofs of the other towers will also be framed with diagonal and square tie-beams, and hip rafters, curved to the shape of roofs, and strongly braced with diagonal braces, strutts, and uprights throughout.

All the remaining roofs, if any, including those of the porches, &c., are to be framed in such manner, and of such dimensions, timber and workmanship, as shall be directed by the architect.

Deafening.—All the floors, except those of the chemical lecture-room and students' working laboratory and other fire-proof rooms, will be prepared for deafening, with strips and plank, in the best manner.

FLOORS.

Basement.—The floors of the basement of the west wing, and west central range, will be of the best Georgia yellow pine narrow plank, not more than five inches (5 in.) wide, laid in courses, and blind-nailed.

First story.—The floors of the library, lecture-room, cloisters, apparatus room, campanile tower, and, in general, all the floors of this story, except such as are directed to be tiled or flagged, and including the cloisters and side slides, which will be planked under the flagging, will be of the best clear Georgia yellow pine, narrow, 1¼ inch plank, laid in courses not more than five inches (5 in.) wide, and blind-nailed.

Second story.—The floor of the museum will be laid, first, of 1¼ inch narrow white pine plank, over which will be laid a mosaic or tesselated floor of black walnut, yellow pine, white oak, maple, and other American woods, arranged in such patterns as may be directed by the architect. The upper floor will be blind-nailed to the lower one, and all its joints will be glued up strongly in the best manner.

Galleries, &c.—The floors of all the galleries of both stories, and all the floors of all the towers, will be of the best Georgia yellow pine, not more than five inches (5 in.) in width, blind-nailed, and laid in courses.

All the above floors will be of thoroughly seasoned 1¼ inch plank, planed, tongued and grooved, and laid in courses in the best manner. All the butts and joints will be planed true, after the floors are laid. The plank must be free from sap, shakes, and black or unsound knots; and when *clear* plank is specified, it must be free from all blemishes.

Roof.—All the roofs of every part of the building and towers to be sheathed with

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1¼ inch merchantable white pine plank, mill-worked, and strongly nailed to the purlines. The sheathing to be free from sap, shakes, sun-cracks, and black or rotten knots.

Partitions and centres.—There will be a stud partition between the Regents' room and the rear staircase, which will be framed up of 8 by 4 inch joists, well bridged and trussed, and set twelve inches (12 in.) from centre to centre.

All the centres for the mason work, and stone-setting, to be furnished by the carpenter.

Furring.—All the outside walls, which are not lined with brick, to be furred with best 2 by 3 inch furring, set twelve inches (12 in.) from centre to centre.

Ceilings.—All the flat ceilings to be cross-furred with 1½ by 2 inch stuff, set twelve inches (12 in.) from centre to centre.

Groined ceilings.—The ceilings of the west wing, east wing, west connecting range and its cloister, museum, rooms in the front towers, and the room in the campanile on the museum floor, of the principal porch, the Regents' room, the staircases, vestibules, central hall, and library, will be groined and ribbed, per plans, sections, and directions of the architect.

These ceilings will be groined as follows:

West wing.—Divided by columns and arches into three (3) aisles, each of seven (7) sections of groining, and composed of an artificial clerestory, under the roof, lighted by sky-lights, and two side aisles. The apsis will also be handsomely groined.

West connecting range.—The gallery of art will also be divided into a central nave with a clerestory, and two side aisles, each containing seven sections of groining or twenty-one (21) in all. The cloister will also have seven (7) sections of groining.

The library will be divided by pillars and arches into five aisles, each containing seven sections of groining, not including the small groins between the pillars, which will be groined per plan and directions of architect.

The central hall will be in one aisle, containing sections of groining, per plans.

The staircases will be groined per plans and directions of the architect.

The east wing will be in a single aisle, handsomely groined.

The Regents' room will have one section of groining, and a groined ceiling to the bay window.

The museum will be divided by pillars into five (5) aisles longitudinally, with a transept or transverse aisle, at the centre, groined in a single aisle. Each of the longitudinal aisles will contain fifteen sections of groining. The traverse aisle will contain two sections of groining, in front of the longitudinal aisles.

The rooms in the front towers will have each groined ceilings.

The front and rear staircase halls will be groined per directions of architect.

The ceilings of the rear staircase hall will be groined per plans and directions of architect, as will also be the rear vestibule of the museum under the gallery.

The ceiling of the porch and vestibule, or stair hall of chemical lecture-room, one ceiling of campanile tower, and one ceiling on the first floor of the octagonal tower, will also be groined per directions of architect.

The ceiling of the principal porch will be groined per directions of architect.

The east cloister will be furred for a flat ceiling, with square panels and heavy ribbing.

The ceiling of the great lecture-room will also be paneled with heavy ribbing.

All the remaining ceilings in the building, and of the towers to the top, will be cross-furred.

Bracketing.—At the intersection of all the groins, as also when they meet the walls, and on all the rib lines shown on the ground plans, brackets for ribs will be formed in the best manner, to receive four (4) nails to each lath. Cornices will be bracketed out whenever required. All the pillars will be bracketed, as well as the half and quarter pillars, on the walls. Brackets for pillars will be set on the outside of all the wooden door jambs, and at all the window jambs. There will be a boss or half-boss at every intersection of the ribs, all which bosses will be strongly bracketed, and in general all the bracketing necessary to complete the building will be furnished and put up.

All the above furring will be made of three thicknesses of 1¼ inch plank, strongly nailed and spiked together, and strongly hung from the floor and roof beams, by two inch plank.

All the brackets will be secured in the strongest manner.

Seats, &c.—The lecture-rooms and their galleries will have handsome settees of

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black walnut, with fronts carved to the shape of *old stalls* to each. The settees to have neat cap moulds and backs, and to be finished and carved in the best manner.

All the above black walnut will be oiled with the best raw linseed oil, three coats, well rubbed in.

Platforms and stage.—At one end of the great lecture-room a platform will be raised from 4 to 8 feet from the floor, for the length of one of the bays, to form a stage, and will have in front of it, and at the same level, an octagonal projection for the lecturer. The front of the platform will be wainscoated with narrow black walnut, 1½ inch plank, tongued and grooved, and not more than four inches in width. The plank will be set on end, and will be neatly capped. On the projection a handsome carved table of black walnut will be provided, and a seat for the lecturer. Over the stage a canopy will be formed of joists, well framed, hanging down five feet from the ceiling, to conceal the rollers on which the illustrations are to be placed, and on each side of the stage a partition of joists (8 by 4 inches) will be carried out from the walls as far as the line of the front of the gallery, and terminating at the last pillar of the gallery. Thirty rollers of wood, six inches (6 inches) in diameter, and twenty-five feet (25 feet) long, will be hung behind the canopy. The rollers will have iron axles at their ends, working in iron eyes; and each roller will have a twelve inch sheave at one end for an endless cord to pass over, to work them. The ends of these rollers will also be concealed by a canopy of 8 by 4 inch joists hanging down five feet (5 feet) from the ceiling, and well framed.

Chemical lecture-room furniture.—A platform two feet (2 feet) high will be made, of strong joists and plank, raised from the front of the professor's front desk (A) to the rear of the room. On this the desk (A) will be placed, which will be of the dimensions shown on the plans, and will have drawers on all sides. The other desk (B) will be made in the same manner and similarly furnished.

Behind the front lecturer's desk a partition will be carried across, having sliding doors, handsomely panelled, three inches in thickness, with proper fixtures, per plans. In the side of this partition, facing the lecture-room, there will be closets, with shelves, three feet in depth, and having sash doors, filled with good American glass.

The laboratory behind the lecture-room will be divided into two stories, connected by two flights of handsome staircases.

The first story will be divided into three apartments; the centre one of which will contain the working table (B) hereinbefore described, and will be shelved all around, except where occupied by doors and windows, to a height of eight feet. These shelves will be enclosed above a line three feet high, by paneled doors hung in boxes with weights, cords, and pulleys, like sash, and below that line the closets will be projected to form a table fifteen inches wide, below which there will be a range of drawers about 6 inches deep, and below the drawers a range of closets with panelled doors. On the room to the right hand there will be two tables (A) two feet wide and eight feet long, made of three thicknesses of narrow 1½ inch white pine plank, not more than three inches in width, planed on both sides, tongued and grooved, and put together diagonally with glue and screws, and having strong legs. The remaining part of the walls will be shelved off as in the preceding apartment.

On the room to the left there will be a working table (G) three feet wide and seven feet long, made similarly to those above described. The partition wall next centre will be shelved off as in the other apartments. Racks of shelves, with holes bored in them, will be placed on each side of the sink (F.) In the second story of the laboratory, which will also be divided into three apartments, the centre one will contain in the centre a series of shelves, resting like steps from the partition wall to the rear, to a height of seven feet. The walls will be shelved with shelves one foot in width, enclosed in sash doors hung with weights, cords and pulleys, like window sash, and, with the two remaining rooms, will be lighted with skylights of best double thickness American glass in the roof, and interior skylights in the ceiling, with fancy sash, filled with best English crown glass, (A.)

In the east connecting range, which will be also divided internally into two (2) stories above the basement, the first story will contain a students' working laboratory, in the centre of which will be two strong tables in the form of the letter T, the tops of which will be of soapstone flags. These tables will be furnished with drawers, shelves and closets.

All around the sides of the rooms, not otherwise occupied, there will be tables two feet nine inches wide with wooden tops, and drawers and closets; below and above these tables shelved closets, with sash doors hung with weights, cords and pulleys, will be carried to a height of eight feet from the floor. Stairs three feet wide, and well finished, will connect this laboratory with the second story. The second story

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above the laboratory will be divided into three apartments, one 15 by 14, as a private room for the lecturer; and the other two 12 by 25, one of which will have strong tables all around, and the other fitted with closets, drawers and shelves, with sash doors, as above, all around.

Sash and glass.—All the windows of every kind, size, and description, in every part of the building and towers, both interior and exterior, will be fitted with square sash, set diamond wise, and filled with the best English crown glass. The windows will be hung in frames with cords, weights, and pulleys, and will be finished in every respect in the best possible manner.

Inside windows, balustrades, gallery fronts, carving, &c.—There will be two circular windows in the central hall (per plan of library) carved of the best white pine; also one triple or two double windows between the Regents' room and the rear stairway, and 12 triple windows in the clerestory of the west wing. These will be carved in the best manner, of the best white pine, according to the directions of the architect. All these windows will have frames and sash, and be filled with glass as described above. Their mullions will be of wood, painted four (4) coats, to resemble the walls of the interior, and sanded.

There will be open balustrades three feet six inches (3 feet 6 inches) high, of black walnut, or of best white pine painted and grained, as may be directed, carried all around the front of the galleries of the museum and library, as well at the ends as at the sides, per plans. The balusters will be circular pillars with turned bases and carved capitals, supporting carved trefoil arches, over which a handsome moulded top rail will be carried, per plans.

The gallery front of the great lecture-room will consist of pillars with carved bases and capitals, as above, supporting semicircular carved arches, over and under which will be a large hook label mould, well and deeply sunk, all of black walnut. At the distance of two inches (2 inches) behind this arcade, a wainscoating of one inch black walnut boards, not more than four inches wide, and set vertically, will be carried around to form the front of the gallery, and from the top of the label to this wainscoat a top board of black walnut 1½ inch thick will be carried, to form a book board for the gallery front.

The gallery front will be four feet six inches (4 feet 6 inches) in height.

The gallery fronts of the chemical lecture-room will be framed of strong 3 by 10 inch timber, which will be wainscoated on both sides four feet (4 feet) high, with ¾-inch black walnut boards, not more than four inches in width, capped on the outside with a handsome label, and having a label mould at bottom. And, in general, all the work necessary to make the gallery fronts complete, is to be performed.

Stairs.—The principal front stairs will consist of two double flights, one on each side of the entrance hall. The steps will be five feet three inches (5 feet 3 inches) in width, and the well will be from eighteen inches to two feet (18 inches to 2 feet) in width. There will be a seven inch square carved newel to each flight, with the sides handsomely paneled.

The balusters will be octagonal pillars, with turned bases and caps, having a semicircular arch with a trefoil head between them, and will be surmounted by a top rail, 4 by 6 inches, handsomely moulded. The stairs will have handsome coves and brackets hanging down below the underside of the steps. The steps will be supported by wrought-iron frames, properly put together to insure stability. The risers will be of the best white pine, and the treads of the best Georgia yellow pine. And the underside of the stairs will be furred ready for plastering.

The stairs will rise from the ground floor to a point four feet (4 feet) below the under side of the roof timbers, say a height of forty-three feet (43 feet) or thereabout. At this height the upper platforms or landings will be placed. At one end of each of these a door will be placed which will communicate with the front towers. A spiral staircase will be carried up from the level of these upper platforms to the top of the higher of the two front towers. This staircase will be six feet (6 feet) in diameter, and will be partitioned off in one corner of the tower. It will have proper platforms and doors of communication to the different stories of the tower, of which there will be four (4) above the roof of the main building. This staircase will open on the roof of the tower, which will be nearly flat, and is to be used as a place of observation.

A similar staircase will extend from the same level upwards to the floor of the upper story of the lower central front tower.

Both of the above stairs will have treads and risers of yellow pine, with handsome coves and nosings. They will be ceiled in with ¼-inch white pine plank, will have

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windows in the partitions for light, and will have neat 8 by 4-inch black walnut hand rails, supported by iron elbows.

The principal rear stairs, about twenty-three feet (23 feet) in height, of rise and of the form and dimensions shown on plans, will be finished in a manner exactly similar, and of the same materials and workmanship, as the principal front stairs described above.

Staircases in campanile tower.—The interior of the campanile tower will be eleven feet (11 feet) square, and will be occupied, at the level of the museum floor, with a staircase having steps four feet (4 feet) in width, and a well three feet square in the centre. This staircase will lead from the ground floor of the museum to its gallery, and have steps, risers, balusters, newels, coves, brackets, &c., of a similar character to the principal stairs above specified. Above the level of the gallery floor a small stairway two feet six inches in width will be carried in flights, per direction of architect, to the upper story of the tower. The stairway will be partitioned off from the tower by joists, and in the partition, doors will be framed and set to communicate with the two upper stories of the tower.

Staircases of octagonal tower.—A winding staircase with steps three feet in width, having a clustered column in the centre, will lead in this tower from the floor of the library to the gallery. The steps will be supported against the wall and the central column by iron stringers, and the hand rail will be of black walnut. The sides of the tower will be wainscoated up to the under side of the hand rail, and the central column will be formed of clusters of circular columns of wood. The wainscoat and columns will be painted four coats, and column sanded to represent marble. A hand rail of black walnut, supported on handsome iron elbows, will be carried around the column. The ceiling of the octagonal tower over this staircase will be groined. A staircase, similar in all respects, and similarly furnished, will lead from the floor to the gallery of the museum. Above this line a smaller staircase will be carried to the summit of the tower. All the treads and risers in these stairways will be of the best yellow pine.

On each side of the rear entrance to the museum a flight of steps three feet wide will lead from the ground floor to the gallery, with balusters, rails, arches, trefoils, newels, coves, and brackets, similar to those of the principal front stairs.

The *stairs to the chemical lecture-room* and its gallery will be placed in the porch on the eastern end of the chemical lecture-room wing. They will consist of two flights: one in the porch, leading level of the porch floor to that of the chemical lecture-room floor, and one in a double flight, landing from the latter level to the gallery. The latter will have steps, coves, newels, balusters, arches, &c, similar in character to those of the two principal staircases, but of smaller horizontal dimensions. Beneath the latter stairs a flight of steps will lead from the level of the chemical lecture-room floor to the floor of the basement beneath it. These will have risers and treads of yellow pine, and plain octagonal newels five inches (5 inches) in diameter. The balusters will be octagonal, two inches (2 inches) in diameter, with 8 by 4-inch rails, all of black walnut.

The *stairs in tower of west wing* will be square, filling the whole of the tower, and will be carried first to a level with the floor of the first story, and then to the top of the side aisle arches, with handsome octagonal balusters two inches (2 inches) in diameter, with semicircular arches between those of the same finish, &c., as the two principal staircases, with a square newel handsomely carved, and a 8 by 4-inch moulded hand rail, all of black walnut. The sides of the tower will be wainscoated to the height of the hand rail.

The *private stairs to Regents' room*, lecturers' room, and muniment room, will be in the small octagonal tower attached to the central rear tower. They will be carried from the level of the surface of the ground, to the third story of the tower, or muniment room, a height of about seventy feet, (70 feet.) They will wind around a column from 8 to 12 inches in diameter, and will have treads and risers of yellow pine, and a handsome moulded hand rail, 8 by 4 inches, of black walnut, secured to the walls by iron elbows. The walls will be wainscoated, on end, with black walnut, as specified in former instances, to the height of hand rail.

Laboratory stairs.—Private stairs, with steps three feet in width, having octagonal balusters two inches (2 inches) in diameter, and 8 by 4-inch moulded rail, of black walnut, will be carried from the ground floor of laboratory, at the end of the chemical lecture-room, to the second floor. A flight of stairs, also three feet (3 feet) in width, will be carried from the first story of the east connecting range to the second story of the same, a height of about thirteen feet. They will be partitioned off with

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8 by 4-inch joists, and will have a 8 by 4-inch hand rail fastened to the wall, both with iron elbows. Under these stairs a flight of similar width, and similarly finished, will be carried from the first floor to the cellar.

Stairs in library and museum.—Twelve small flights of circular stairs will be carried, at the places shown in the plans, from the ground floor and to the galleries of the library and museum. They will be supported on iron, and there will be a trap-door above each of them in the gallery floor, hung on best hinges, which will serve for the purpose of communicating with the galleries.

Elevators.—In each of the smaller towers at the corners of the main building, elevators, having each three (3) shelves, set three (3) feet apart, and framed strongly together, will be furnished. They will be provided with sheaves, cords, and will have cast-iron counterpoises running in boxes on the four sides of the tower. The elevators will be worked by a crank, and will be used for raising books and other heavy weights from the bottom to the top of the building.

Doors and their furniture.—All the doors of every part of the building will have semicircular heads, and handsome trimmings and casings, of the same style as the building.

The central front and rear doors will be made of four thicknesses of 1½ inch white pine plank, laid together diagonally. The outside plank will be of the best clear white pine, and the two inner layers of the best merchantable white pine, all perfectly seasoned. The plank will be narrow, and all of the even width of six inches, (6 inches.) The outer layers will be set diagonally, and all beaded and cross-beaded.

All the plank will be planed, tongued, and grooved, and will be strongly screwed or rivetted together, with white lead in the joints, and painted on all sides.

The hinges, and key plates, and knob plates, will be of heavy wrought iron scroll work, bronzed in the best manner; and the doors will be grained white oak, and will be varnished four coats.

Furniture of apparatus rooms.—The room in the east connecting range behind the east lecture-room, and the room on the same floor in the campanile tower, will be shelved all around, with closets, having paneled doors below, and sash doors above, glazed with good single-thickness American glass.

Furniture of library.—See plans and sections for the arrangement of the cases. The cases will have sash doors, and will be shelved per direction of architect. The doors will be glazed with good single-thickness American glass, in diamonds, or squares set diamond-wise, or will be filled with wire gauze. All the pillars of the cases will be handsomely turned, the doors and sashes of the best workmanship. All the mouldings in the arches will be well worked, and all the capitals and bases neatly turned, and ornamented with stucco ornaments, or well carved.

On the ground floor of the library, at every alcove formed by the pillars and cases, a sliding door, handsomely paneled and moulded, 2½ inches thick, filled with ground glass and sash in the panels, will be made to slide between the longitudinal bookcases, so as to shut off the alcove completely from the central aisle. These doors will be fourteen (14) in number, with handsome trimmings, and will each be furnished with an astragal lock, astragal sheaves and sheaveway, of the best description.

The spaces between the bookcases of the galleries and the ceilings of the aisles will be furred up for plastering.

Four tables, each fifteen feet (15 feet) long and five (5 feet) broad, to be made of black walnut, will be set along the centre aisle of the library. These tables will have handsome carved legs, and be covered with green broadcloth.

A small desk of black walnut will be furnished for each of the alcoves.

The librarian's room, adjoining the library, will have handsome book-cases finished in a style similar to those of the library, with glass doors, &c. All the furniture of the apparatus rooms and library, except where otherwise specified, will be of the best clear, thoroughly seasoned white pine, painted three coats with the best of oil paint, grained, if so directed, to resemble oak, and varnished four coats.

Museum furniture.—The museum furniture will be arranged per plans and directions of the architect. All the cases will be of the designs shown on the plans, and will be made of the best thoroughly seasoned clear white pine, handsomely carved, turned, and moulded, with caps and bases similar to those of library, and neat mouldings on the arches. The sashes will be filled with the best French cylinder glass. The spaces between the tops of the gallery cases and the ceilings of the side aisles of the galleries will also be furred up for plastering. The cases will vary in width from four to five feet, (4 to 5 feet.) There will be two rows of cases running longitudinally, in the larger spaces between the columns, the whole length of the

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rooms below the galleries, and one case on each side of each of the alcoves, both of the ground floor and galleries. At both ends of the room, cases three feet (3 feet) wide will be carried up to the under side of the end galleries, as per plan.

All the above cases, will be ornamented, carved, and finished per plan and directions of architect, painted three coats best white lead in oil, grained, and varnished three coats.

The transverse aisle of museum will have cases of similar make and finish carried around the sides and front, except at the stair entrances. These cases will be eighteen inches (18 inches) in depth.

The two rooms in the front tower will be covered all around with cases nine feet (9 feet) high, of similar design, make, and finish, as will also the room in the campanile tower.

The room over the rear stairs will have cases nine feet (9 feet) high, of similar design, make, and finish with the above.

The room over the Secretary's room, in the rear central tower, will be fitted with plain cases, shelved, and with doors glazed with good single-thickness American glass all around.

All the remaining outside doors will be made in a similar manner, and of similar material to the above, of three thicknesses of one and a half inch plank.

All the inside doors of the basement will have neat and plain casings, with semi-circular heads of white pine, painted and grained, white oak or any other wood that may be directed, and varnished four coats. The doors will be made of black walnut or white pine one and a half inch plank, put together diagonally in two thicknesses, grained to imitate such wood as may be directed, and varnished three coats.

All the doors of the towers above the roof line will have handsome jambs and arches of white pine, grained and varnished as above.

The doors will be of two thicknesses, of one and a half inch black walnut, or butternut, or white pine, painted, grained, and varnished as above.

The principal doors of the library, museum, galleries of art, Regents' room, and lecture rooms, will have jambs and arches of the section of a double rebate, with an engaged column or octagonal mould each. The columns will have plinths, bases, and caps, well trimmed and handsomely carved.

The doors will be made of three thicknesses of one and a quarter inch plank, butternut, or black walnut, or white pine, grained in the best manner, and varnished four coats, with bronze scroll hinges, key, and knob plates, &c.

All the smaller doors of the above rooms, and of the remainder of the building, will be made of three thicknesses of three-quarter inch plank, of the same description of materials and workmanship as the above, and with similar hinges, &c. The jambs and arches to be of similar description and workmanship to those of the principal doors.

All the knobs of all the above doors to be of bronze. The locks to be of the best manufacture, and largest size, suitable to the dimensions of the doors. All the outside doors and principal room doors to have strong bolts.

The sliding doors in the library alcoves to be furnished with sheaves, sheave-ways, astragals, and astragal locks, of the best description.

And, in general, all the doors for the whole building to be finished as above described, in the best and most workmanlike manner, and in all respects in accordance with the directions and plans of the architect.

Roofing, &c.—All the roofs, except those of the central front towers, campanile towers of the main building and west wing, and smaller octagonal and square towers of the central building, will be tinned with best single cross tin, soldered together in the best manner, painted two coats, and warranted tight for five years. All the gutters of every part of the building, and the roof of the larger central front tower, will be of the best double cross tin, and painted two coats. All the leaders, which will be put in in sufficient numbers to carry off the water to the cisterns in the roofs, and to the ground, will be of the best double cross tin, varying from four to six inches in diameter, and made square or octagonal. If so directed, they will be painted three coats, and sanded in the second coat, the third coat being coursed to resemble stone; and they will be put in of such sizes and in such number and situations as the architect shall direct.

All the remaining roofs (i. e., of the towers, &c.) above excepted, will be made of the best Welsh slate of large size, and laid in the best manner, according to the directions of the architect.

Cisterns.—In each of the roofs of the two connecting ranges a cistern of ten feet square, and four feet six inches deep, which will receive the water of the main build-

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ing, will be made of best three-inch narrow yellow pine plank, framed up with best 6 by 6 inch joist, like a mill race, and lined with best sheet lead, weighing five pounds to the square foot. These will be fed by a leader from the roofs of the main building, and will have an overflow or waste weir communicating with another leader, which will carry off the surplus water to the ground.

In the spaces between the central front and central rear towers and the main building, two cisterns, 6 by 12 feet, and four feet six inches deep, of similar material and workmanship to the above, will be placed. These will be fed by the water from the towers of the front and rear.

The roofs where all the above cisterns are placed will be strengthened to bear their weight, by additional rafters, tie-beams, king posts, and strutts.

Water closets.—There will be two water closets, one on each side of the rear staircase, between the Regents' room and museum, on the second floor, which will be furnished with cisterns, ball cocks, traps, cranks, basins, cocks, &c., of the best description, with brass furniture, and will be finished complete in every respect. They will be fed by one and a half inch extra strong lead pipe, from the cisterns above described. The waste-pipe will be five inches in diameter, of best sheet lead, five pounds to the square foot, which will be carried to a cesspool on the outside of the tower.

There will also be one water closet in the thickness of the walls of the large front central tower, one in the campanile tower, or near it, one in the basement of the chemical wing, and one in the west connecting range. All of the above to be completely finished in the best manner, with all fixtures necessary to render them complete, fed from the cisterns in the roofs, and having waste pipes of five inches diameter, as above, communicating with cesspools on the outside of the building.

Bases of best clear white pine, painted three coats, grained in the best manner to imitate such wood as may be directed, or of black walnut or butternut, varnished in all cases four coats, will be carried around the rooms, halls, galleries, &c., of heights varying from four to fifteen inches, and they will be all handsomely moulded, and worked in the best manner, according to the directions of the architect.

Mantel.—A large mantelpiece of very handsome design, as may be directed by architect, will be carved from best black walnut, for the Secretary's room. The whole mantel, with its columns, frieze, and shelf, and the ornaments on it, shall be filled with carved Norman mouldings, deeply sunk, and of best description.

Finish of Regents' room and bay window connected with it.—All the walls of the above will be wainscoated with black walnut or butternut, as may be directed by architect, handsomely paneled, and carved all around with pateras, quatrefoils, and capped with a heavy-carved mould corbel-course, surmounted by a carved cable-mould.

In the side bays of the triple arch, between the room and the bay window, seats of black walnut, or butternut, handsomely carved, will be formed.

All the jambs and arches of the triple-window arch will be moulded and carved per plans and directions of architect.

Eighteen heavily-carved arm-chairs, and one heavily-carved table, in the Norman style, will be carved for the Regents' room, from best black walnut, varnished four coats, and polished. The whole to be carved according to the designs and directions of the architect.

Skylights.—There will be six skylights, five feet square, in the roof to the chemical laboratory; two skylights, five feet square, in the central front stair hall; two of same dimensions to rear stair hall; and twelve skylights, five feet square to the west wing; all filled with good double thickness American glass, in 2-inch sash. And under these, in all the ceilings of the above rooms, will be interim skylights, filled with best single thickness American glass in handsome fancy sash.

Painting.—All the wood work, of every description, including the shelves of the cases, and in general all the wood work not otherwise specified, to be painted three coats of best white lead and boiled oil.

All the doors and their jambs to be varnished four coats.

All the wood of every description to be perfectly seasoned, and to be free from sap, shakes, black or rotten knots, and all imperfections that might endanger its strength or durability.

All the workmanship, of every kind, to be performed in the best and most perfect manner.

The whole of the above carpenter work, of every description, and all the work

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connected with it, to be performed according to the plans and directions of the architect.

As it is intended that the above specifications and the plans will cover the whole and perfect completion of the building, and all of its appurtenances, no claim for extra work will be allowed unless caused by actual alterations of the plans. And the parties to the contract will be bound to submit to the decision of the architect of the building, in the sum of ten thousand dollars.

JAMES RENWICK, JR.
Architect and Civil Engineer.

Mr. Hough offered the following resolution, which was adopted:

Resolved, That in locating the building for the Smithsonian Institution, the centre of the principal building, exclusive of projections, be placed upon the centre of the lot or site of said Institution from north to south, and upon the centre of Tenth street.

Mr. Hough, in offering the above resolution, stated, that as he was compelled, on Monday next, to leave the city, he desired to say, that if this resolution should be reconsidered, so as to place the building centrally between 7th and 12th streets, he would make no objection.

And, on motion, the committee adjourned.

Sixteenth Meeting, March 24, 1847.

Present, Messrs. Seaton and Owen.

The chairman submitted from Mr. Renwick, architect of the Institution, the following report to the Building Committee of the Smithsonian Institution:

GENTLEMEN: In compliance with your resolution of Friday, the 19th ultimo, by which, in company with Dr. Owen, I was directed to examine and report upon the quarries of freestone on the farm of Mr. Peter, at Seneca creek and Bull Run, and those on the adjacent lands, with a view of ascertaining their capability of affording a sufficient quantity of building material of good quality, and of color suitable for the purposes of the Institution, I beg leave to state that we proceeded on Saturday morning to the localities of the quarries of freestone occupying the whole eastern bank of the Potomac, from the mouth of the Seneca creek to a point distant about one mile north of it, where our examination terminated. We also found the stone extending up all the valleys of the smaller streams, as far as we examined them.

The quality of the stone varies from that which is highly argillaceous, and easily decomposed, to that which is silicious, and well calculated to stand the weather and the attacks of frost.

It also varies in color and texture; some of the strata being highly laminated, and others what is technically termed liver-rock, showing but little signs of stratification; and the color varies from a cold blue to a warm lilac gray.

The quarries which appear to have been worked to the greatest extent, are those called the College quarries, from their belonging to the College at Georgetown. The color of the stone in these is generally a blue gray, (see specimen 21, of Dr. Owen's report,) and is rather cold and unpleasant in its aspect; though several of the strata or layers in the middle of the quarry were of a pleasant and warm gray. See specimen No. 28. These latter, however, are difficult of access, having several strata of inferior stone over them, and cannot therefore be obtained without great and unnecessary expense, and should only be resorted to in the event that no other stone of equal color and quality can be found in a more favorable position.

The College quarries lie to the northwest of Bull run and Seneca creek. The dip of the strata is at an inclination of about 20° to the southwest.

To the northwest of these quarries, and on the same face, are quarries belonging to Mr. Peter, where we found the buff-colored stone, (specimen No. 24.) It is much to be regretted that this stone is neither sufficiently durable, from its being argillaceous, nor found in sufficient quantities for the purposes of the Institution, as, in my opinion, it surpasses in color any stone I have as yet seen in this country; resembling in hue that used in Edinburgh, and the Caen and Bath stones, which were so much used and so highly esteemed by the architects of the middle ages.

To the north of this quarry is one belonging to Mr. Lee. The color of the stone in this is a warm gray, and the texture is fine and highly silicious, and the quality is excellent. It is a liver-rock, and is found in several strata of considerable thickness, which would afford an abundant supply. Some of the layers, however, contain copper, which might possibly render it liable to stain by long exposure, unless carefully selected. See specimen No. 25.

From this quarry, the most northern one we examined, we proceeded in a south-

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easterly direction, recrossing the College quarry to the Bull Run, belonging to Mr. Peter. The quarry on this run has been opened at a point up the stream, distant about 800 yards east of the Potomac.

The stone is of excellent quality, of even color, being of a warm gray, a lilac tint resembling that known as ashes of roses, and can, from all indications, be found in sufficient quantities to supply all the face work for the Institution.

There appear to be three layers of this color, which are, respectively, 20, 24, and 30 inches in thickness.

The stone is highly silicious, rings when struck with the hammer, and where it has been exposed in the bed of the Bull Run to the action of the water and frost apparently for ages, and in the culvert under the canal for several years, shows little or no signs of decay.

We traced strata of this color from the present quarries to the mouth of the Bull Run, and found it between an overlying layer of a shaly or slaty argillaceous quality, (which is easily decomposed, and must therefore be very carefully avoided,) and a substratum of the dark red-colored stone, (see No. 18 of Dr. Owen's report.) We also found stone of the same color and quality in an old quarry, distant about 600 feet south from the mouth of the Bull Run; thus rendering a sufficient supply almost certain.

The strata lie well for quarrying, having but a slight covering and sloping towards the run, thus enabling it to be quarried without binding, which will render the expense small; and the color is equal to that of any stone we examined, except the buff. In company with Mr. Peter, we next visited a house built of coursed and hammered rubble masonry of stone of this color, in which it had a pleasing and airy effect upon the eye. Mr. Peter's stable is also built of stone of this color, and produces an excellent effect. From the above examinations, we were therefore of opinion that Lee's quarries, and those on the Bull Run, combine, more than any of the others we have visited, the requisites most necessary for structure, durability, and beauty.

We would also recommend, if the quarry on the Bull Run be chosen, that none darker than specimen No. 19, in Dr. Owen's report, be allowed to be used in the building, and that great care be taken to prevent any of the argillaceous stone being used; and if Lee's quarry should be selected, that all rock showing indications of copper be prohibited from being used. I subjoin herewith a rough topographical map of the region, in which the distances and localities are put down from memory, as the limited time of our visit prevented any accurate measurements.

Respectfully submitted.

JAMES RENWICK, JR., *Architect.*

On motion of Mr. Owen, it was—

Resolved, That the architect cause to be procured and dressed a block of freestone, of the warm gray color, from Lee's quarry; and also, that he cause to be dressed, in Ashlar finish, a portion of the block of freestone from Bull Run quarry, now lying before the west wing of the City Hall.

On motion of Mr. Seaton, it was—

Resolved, That the chairman address a letter to the President of the Chesapeake and Ohio canal, asking a reduction of the rates of toll on said canal, in favor of the contractor.

Mr. Mills, superintendent, submitted to the committee several specimens of freestone, of excellent quality and good color, from the neighborhood of Aquia creek, Virginia.

On motion of Mr. Owen, it was—

Resolved, That Dr. Owen visit and report upon the Aquia creek quarries of freestone.

And, on motion, the committee adjourned.

Seventeenth Meeting, March 25, 1847.

Present, Messrs. Owen and Seaton.

The chairman laid before the committee the copy of a letter, which, in accordance with the instructions, he had addressed to the President of the Chesapeake and Ohio Canal Company, as follows:

WASHINGTON, *March* 25, 1847.

SIR: I am instructed by the Building Committee of the Smithsonian Institution to inquire of you, whether, in the event of the selection of a building material by them from quarries in the neighborhood of Seneca creek, your company would con-

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sent to reduce the rate of toll, so far as regards the buildings of the Smithsonian Institution.

The amount required by us may, in a measure, depend upon your answer, as it is not yet determined upon what we will back the walls with. If Seneca stone be taken for the entire walls, I suppose that 10,000 perches of 25 feet may be required.

The Maryland railroad companies had agreed, in event of our selecting marble, to reduce their rates of freight, in our favor, from 4 cents to 2½ cents per ton per mile.

I am, sir, your obedient servant,

ROBERT DALE OWEN,
Chairman of the Building Committee.

To the PRESIDENT OF THE CHESAPEAKE AND OHIO CANAL COMPANY.

On motion of Mr. Owen, it was—

Resolved, That the architect be, and he is hereby, instructed, during the course of the present year, to commence and carry on to completion the whole of the east wing and the east connecting range, so far as is consistent with the safety of the structure; and also to commence the foundations of the west wing and the west connecting range, and take such preparatory steps towards the work of the said wing and range as may allow the contractors to prosecute the work with proper economy.

On motion of Mr. Seaton, it was—

Resolved, That the architect be authorized to cause to be prepared two perspective views of the building—one of the north front, from the northwest, and one of the south front, from the southeast—provided the cost of completing the two said views in the best style of art shall not exceed two hundred dollars; and that the same be colored to correspond with the color of the stone that may be adopted for the facing of the building.

On motion of Mr. Seaton, it was—

Resolved, That Mr. Owen endeavor to procure from the several railroad companies between this city and New York, a free passage for the architect of the Institution, pending the erection of the building.

And, on motion, the committee adjourned.

Eighteenth Meeting, March 26, 1847.

Present, Messrs. Owen and Seaton.

The chairman submitted the following letter from Mr. Peter, owner of Bull Run quarry, and other quarries in the vicinity of Seneca creek:

MONTE VIDEO, NEAR DARNESTOWN,
MONTGOMERY COUNTY, MD., *March* 22, 1847.

DEAR SIR: Yours of the 18th instant was received on Saturday last, in which you state that the Building Committee have decided to use, as the material in the erection of the Smithsonian Institution, the stone from some one of my quarries, and that they accept the terms as communicated in my letter, of the 9th of December, to Mr. Seaton, to wit:

Twenty-five cents a perch for all stone intended for face or cut work, and twelve and a half cents per perch for all calculated for backing or rubble work.

The whole number of quarries will be subject to your preference, and I will be pleased if you will make the selection at as early a day as convenient, as there are several persons applying for permission to obtain stone for other purposes.

Yours, very respectfully,

JOHN P. C. PETER.

Hon. ROBERT DALE OWEN,
Chairman Building Committee.

On motion of Mr. Seaton, it was—

Resolved, That the final decision on the subject embraced in Mr. Peters' letter be delayed until the return of Dr. Owen from Aquia creek, and until his report on the quarries there is received.

On motion of Mr. Seaton, it was—

Resolved, That among the trees to be planted within the grounds of the Institution there be included the following:

Elm, beech, oak, osage orange, pecan, sugar maple, silver-leafed maple, weeping-willow, silver-leafed willow, magnolia grandiflora, pride of China, common laurel, tulip tree, dogwood, holly, hawthorn, horsechesnut, Spanish chesnut, walnut, hickory,

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mountain ash, lime tree, evergreens, (including the several varieties of pines,) aspen, and sycamore.

And, on motion, the committee adjourned.

Nineteenth Meeting, March 30, 1847.

Present, Messrs. Seaton and Owen.

The chairman submitted from Dr. Owen the following report on the Aquia creek and other Stafford county freestones.

To the Building Committee of the Smithsonian Institution:

GENTLEMEN: On the 26th of March, agreeably to a resolution passed by your committee, I proceeded down the Potomac to examine the quarries of freestone of Stafford county, Virginia.

On arriving at the mouth of Aquia creek, which is 50 miles from Washington, I learned that the quarries which have been chiefly wrought for the public buildings lie about seven miles up that stream.

On my way I stopped at Major Brook's, five miles on this side of Fredericksburg, to obtain some information about the route. Learning from that gentleman that there were several good quarries of freestone in his immediate vicinity, on Accokeek creek, and near the line of the railroad, I determined to visit them.

I found them situated on both sides of Accokeek creek, close to Major Brook's mill-dam. The upper beds here are about six to eight feet above the level of the creek, and are of a coarse texture, approaching to the nature of a conglomerate. Beneath, about four to five feet above the level of the creek, the rock is finer-grained, with some yellow and gray streaks, (see No. 26.) The rock on this part of Accokeek is below the level of the water when the flood-gates of the mill-race are closed. It was here that the rock of which the mill-dam is constructed was quarried. So far, it has stood the test of exposure in this situation well. The abutments of the railroad viaduct over Accokeek creek are constructed of rock from these quarries; and though the selection does not seem to have been very carefully made, it still remains a substantial work.

The quarries on Aquia creek most convenient to navigation, and those which furnish a rock lightest colored, finest grained, and most uniform, are situated on what is called the Island, being a neck of land seven miles by the course of the stream from its mouth. This island is elevated 15 to 20 feet above a flat swampy plain, which surrounds it on every side, and which, in the early settlement of the country, was an inland bay, navigable for small craft.

At present the waters are contracted into the narrow channel of Aquia creek, about 15 feet wide.

One of the quarries on this island is known by the name of Stewart's quarry, but now owned by Mr. Symington, of Baltimore. To the north and south of it are two others, belonging to the United States.

The columns of the east portico of the capitol, each of a single piece weighing 18 tons, were obtained at these United States quarries.

The principal ledge hitherto worked here has a covering of only two or three feet of earth, and lies nearly horizontal, in a vast bed from six to eight or 10 feet in thickness, without the slightest apparent seam. For this reason, though the bed is so near the surface, it has been quarried at great expense, at least by the method hitherto employed, which is to groove it behind and on one side two feet wide, (or sufficient to receive a man,) in a vertical direction, even to its base, and then "loft" it off in a horizontal direction by the introduction of wedges at the bottom of the bed in the direction of the stratification.

This Island freestone is of light color, almost white when dry; and is equal, if not superior, in texture and color, to any of the sandstones in this neighborhood. That on Symington's tract (see specimen No. 27) is rather of a finer grain than in either of the United States quarries; (see specimen 28.)

Part of the rock employed on the inside of the Post Office was procured on this island.

Numerous other quarries are found in this vicinity, many of them well opened and wrought to a considerable extent. None are, however, immediately on the bank of Aquia creek. Some lie to the east of the swamp, in the ridge which lies between Aquia creek and the Potomac river, and distant from the latter stream from three to seven miles. These were not visited, as there were no means of crossing the swamp. Others have been opened in many places along the banks of Rocky run.

The stream empties into Austin's run, which bounds the island and swamp on the southwest. That nearest to Aquia creek is distance from half a mile to three quarters

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' a mile, and is situated on the south side of Rocky run, close to the road which ads from the Island to Captain Towson's. This quarry affords a tolerable freestone, ee specimen No. 29,) but it has spots and streaks in it, and is of rather a coarser xture and not so uniform in color as the Island quarry.

About one mile further on the same road, and distant about a mile and a half from quia creek, on the north side of Rocky run, is Towson's Beech quarry, which has ien wrought to a considerable extent, and has, as most of the quarries here, a fine ce on it, all having been worked on the old-fashioned plan of "grooving" and lofting," as heretofore described. The rock at this locality is of a very fair quality; ttle inferior to Symington's Island quarry, (see specimen No. 80,) and well situated regards drainage and covering for quarrying. Occasional clay and ferruginous ots are visible; but a large supply could probably be obtained here, by proper lection, free from any very unsightly flaws or blemishes.

Half a mile further on, or two miles from Aquia creek, on the south side of Rocky n, is Robinson's quarry, the property of Mr. Galehorn.

It will be observed, by specimen numbered 81, that the texture of the rock at this lace is rather finer, and the color more of a buff, than at the previously described uarry.

Two and a half miles from Aquia creek, and distant about half a mile to a quarter ' a mile from Captain Towson's house, is another quarry of freestone belonging to at gentleman. The beds here are free to work, but much more interlaminated or afy in structure, than any of the quarries examined, and certainly less durable, ee specimen No. 82.) The face of this specimen on which the number stands, gives good idea of the tint which this rock acquires by time and exposure.

On Jackson's branch of Rocky run, from a mile to a mile and a half south from ie island, is a bold quarry, owned by Peggy Norman. The rock here is no doubt dur- ble, but exceedingly indurated, and would be nearly as expensive to cut as granite, ee specimen No. 33.)

Besides the quarries here enumerated, various others have been opened on both des of Rocky run, of similar quality and appearance to those already described. In ct, every hill for many miles in this neighborhood is composed of solid beds of free- one, varying in texture from a conglomerate and even pudding stone, to a fine- rained rock similar to number 26, and varying in shade from a yellowish brown and buff color, to a nearly pure white. It is probable enough, that as new quarries are pened a better material may be found than any yet disclosed.

In none of the quarries visited in Stafford county did I observe red and pink free- ones like those of Seneca creek. Neither did I see there any of those schistose beds, ith green cupreous incrustations, such as occur in the sandstone formation of the pper Potomac, in the cupferschiefer of Germany, the copper States of England, and ie Permian system of Russia. On the geological charts of this region, these free- ones are designated as of the same age as the red sandstones of the Connecticut alley and New Jersey. They differ from these materially in lithological character, nd apparently in associated minerals, so far as I have had opportunity of judging; evertheless, they may be cotemporaneous; this can be ascertained only by a careful earch after organic remains, which time did not permit.

On my return to the watering station on Accokeek, I stopped at Major Brooks' r the purpose of seeing a quarryman who has had long experience not only in the uarries of Aquia and Accokeek creeks, but also in the marble and granite quarries f the eastern States.

He informed me that at seven miles from the mouth of Aquia creek, close to the ailroad, at the high bridge on Potomac run, there are solid ledges of freestone in an scarpment of 90 feet; and according to his statement, there is at that locality a bed ery similar in texture and color to that previously described as owned by Syming- n. Unfortunately, it lies deep seated, and would require a stripping of about 15 et to get at it; but he says that the strata rise, as you proceed up the Potomac run, the west, and that there is reason to believe that the ledge in question can be found ear the surface about a quarter of a mile from the railroad. If it remains of uni- orm texture for that distance, a material not inferior in quality to the best rock on he island might be quarried there more convenient to transportation, and in a much ore healthy situation, than on the island, surrounded, as that locality is on all sides, y low marshy plains.

On questioning this man with regard to the comparative expense of quarrying reestones there and on Seneca creek, he confidently asserted that by a judicious mode f drilling and very careful blasting, rock might be quarried even cheaper here than n Seneca creek, although at the latter locality the beds, being thinner and of a less livery" nature, can be easily split by the "plug and feather," because on Aquia nd Accokeek creeks, and Potomac run, there is much less stripping, and because the

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beds lie more level and undisturbed. This, however, is certain—that by the old method employed by Captain Towson, dimension stone from Aquia creek has hitherto cost $6 per ton of 15 cubic feet, or 40 cents per foot; and even these prices have not afforded an extravagant profit to the owners of quarries; whilst there can be little doubt that dimension stone can be furnished from Seneca creek for half that amount.

If good material could be obtained near the line of the railroad, either in the neighborhood of Potomac run, or, still nearer, the mouth of Aquia creek, transportation would certainly not cost as much as from the quarries on the Island and Rocky run. There are several obstructions between the quarry and the mouth of the creek, which render it often necessary to lighten the vessels by means of scows, over these bars, and none of the vessels of suitable draught for the navigation of Aquia creek carry over 80 to 100 tons; whereas, if laden at the terminus of the railroad, they could easily carry double that amount, requiring but the same number of hands.

From all the workable beds of freestone of Stafford county, so far as they had been opened, a very considerable portion must be rejected on account of flaws and stains; but, as a general rule, there is less than in the Seneca quarries.

The general appearance of the lighter (buff-colored) beds of the freestones of Stafford county, Virginia, laid up in range work, may be seen by inspecting the east gateway of the President's House, the entrances to the Capitol grounds, and the inside work of the Post Office.

Under the magnifier, minute dark specks may be observed of the color of blacksmiths' scales, which are probably small grains of a mixture of the protoxide and peroxide of iron. If this be their composition, they will, doubtless, in peroxidating, acquire a yellowish or reddish color. Still, in many specimens these are so minute, that the effect would be only to mellow the color, without materially affecting the durability of the mass. That a proportion of this stone is free from material blemish and is a durable material, is confirmed by an inspection of the ledges and blocks in sight, and in the structures composed of the best rock, long exposed to atmospheric vicissitudes; by the glistening particles disseminated on the face of fresh fractures; by the action of the rock on the edge of the dressing tool, indicative of a tolerably pure grit-stone, free from argillaceous admixture; by the heavy solid bed in which it lies in the quarry, generally free from interlamination; and, finally, by the hardening of the mass by exposure.

I incline to believe that the sample of Aquia creek freestone furnished to Dr. Page for examination was not equal to the average quality of the better quarries in Stafford county.

Mr. Dixon, the contractor, is of opinion that the general run of the freestones will be somewhat but not very much more expensive to work and carve than the Seneca sandstones.

As the result of my examination of these quarries, in connection with those of the upper Potomac, I state my belief, that the Stafford county region can furnish an unlimited supply of freestone, of which, by dint of careful selection, a portion may be obtained both sound and durable; not, indeed, free from yellowish or gray streaks, nor, certainly, of as fine a grain as the lilac-gray of Seneca creek, but not disfigured by conspicuous holes, pebbles, or stains, such as are almost universal in the blocks to be seen in the public buildings in Washington, where this material has been used.

I think it owes its present bad character as much to indiscriminate selection as to inherent defects. Its color, occasionally approaching that of marble, is in its favor, though time and the weather change it for the worse. (See specimen No. 32, on the face where marked.)

It would make a lighter and more airy looking building than the lilac-gray. But I am convinced that it could not be delivered in Washington nearly as cheap as the latter; especially if, as the owners of the Aquia creek quarries thought, slave labor only could be employed there. And I feel assured that, even with reasonable care in selection, the chance of procuring the white sandstones unblemished by disfiguring spots or stains, is uncertain; far more so than in the case of the lilac-gray.

Upon the whole, this latter material, as found in the middle beds of Bull Run quarry, seems to me the safest and best of the Potomac freestones; somewhat darker, indeed, than one would desire, if the choice were free, but uniform in color, improving in its tint by the bleaching effect of time, not liable to be disfigured by accumulation of smoke and dust, and of unquestionable solidity and durability.

I annex to this report a rough chart of the freestone quarries of Aquia creek, drawn by the eye, without actual measurement. It will give a general idea of their relative situation.

All of which is respectfully submitted. DAVID DALE OWEN.

WASHINGTON, *March* 30, 1847.

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Specimens referred to in the foregoing report

No. 26. Major Brooks' quarry, lower beds.
No. 27. Symington's island quarry.
No. 28. United States island quarry.
No. 29. Beard's quarry on Rocky run.
No. 30. Towson's Beech quarry.
No. 31. Robinson's quarry, owned by Galehorn.
No. 32. Towson's quarry, near his house.
No. 33. Peggy Norman's quarry on Jackson's branch.

On motion of Mr. Seaton, it was—

Resolved, That the material for the external walls of the building be freestone, of he lilac-gray color, similar to specimen No. 19 of Dr. Owen's report on the free-tones of Seneca creek, and that none be used darker than that specimen; to be aken either from Bull Run quarry or from any other contiguous quarry furnishing reestone of the same color and of equal quality.

Resolved, That a copy of this resolution be furnished to the contractors, and that pecimen No. 19, above referred to, be carefully preserved for reference.

Resolved, That if two wells be opened by the contractors, of such size and descrip-ion and in such spots as may be designated by the architect, the committee will llow for them, when the building is completed, whatever they may then be worth.

Resolved, That a copy of the foregoing resolution be furnished to the contractors.

And, on motion, the committee adjourned.

Twentieth Meeting, March 31, 1847.

Present, Messrs. Seaton and Owen.

The chairman laid before the committee the following letter, in reply to that ddressed by him to the President of the Chesapeake and Ohio Canal Company:

FREDERICK, *March* 29, 1847.

SIR: Your letter of the 25th instant, making inquiry whether the Chesapeake and Ohio Canal Company would consent to reduce the rates of toll on stone, "so far as egards the buildings of the Smithsonian Institution," has been received, and I will resent it to the consideration of the board of president and directors at their next neeting, on the 7th of April, and communicate to you their answer.

I would here, however, merely remark, that the toll charged on stone at present n the canal is 1 cent per perch per mile for twenty miles, and 1½ cent per perch per nile for any greater distance it may be carried; and that with their rates and the sual charge made by boatmen for transporting it, the cost by the canal would, I hink, be less than by the railroad, even at the reduced charge mentioned in your etter.

Very respectfully, your obedient servant,

J. M. COALE,
President of the Chesapeake and Ohio Canal Company.

To the Hon. ROBERT DALE OWEN.

On motion of Mr. Owen, it was—

Resolved, That Mr. Seaton be a sub-committee to see the Commissioner of Public Buildings, and endeavor to procure from him permission for the contractors to use he remains of the old fence standing on such portions of the Mall between Seventh nd Twelfth streets as is not included in the site of the Institution.

Mr. Owen stated to the committee that it was his intention to proceed to-morrow o New York, for the purpose of making preliminary arrangements regarding the reparation and publication of the work on "Public Architecture" intrusted to im as per resolution passed by this committee on the 6th instant, and that he would ake that opportunity of communicating with the several presidents of the railroad ompanies between Washington and New York, and endeavor to procure a free icket on those roads for the architect of the Institution.

And, on motion, the committee adjourned.

Twenty-first Meeting, April 6, 1847.

Present, Messrs. Seaton and Owen.

Mr. Owen having returned from New York, made, in regard to his proceedings here, the following report:

After conversing with the principal publishers in New York, in regard to the

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terms on which they would be willing to publish the volume of "Public Architecture," of which the preparation was intrusted to me by resolution of the committee of the 6th March, I finally, with the aid of Mr. Drayton, (to whom I am greatly indebted for the valuable information and assistance he gave me,) made with Wiley & Putnam, one of the most respectable firms of the city, the following contract:

Agreement between Wiley & Putnam, publishers of the city of New York, of the first part, and the Building Committee of the Smithsonian Institution, by the chairman of said committee, of the second part, dated this 8d day of April, 1847.

Whereas the said Building Committee are charged with the preparation and publication of a volume on architecture, to be entitled "Hints on Public Architecture," and to contain numerous and valuable illustrations, including two perspective views of the buildings of the said Smithsonian Institution, and also to have an appendix containing the results of a research about to be made under the auspices of the said Institution, to test the properties of the most important building materials throughout the United States.

Now the parties of the first part hereby contract and agree to have the said work set up in small pica, of such face as the said committee shall select; thin-leaded for the body of the work, and either small pica solid or long primer for the appendix, at the option of said committee. And the said parties of the first part agree, that the letter-press paper shall measure 19½ inches by 26, and that it shall be of such quality as to cost not less than 16 cents per pound, and that each ream shall weigh not less than 40 pounds. And the parties of the first part further agree, that the printing shall be done in the best manner, with ink of the first quality, and the wood-cuts carefully overlaid, (so as to give their full effect,) by a suitable person accustomed to such work; and also, that the copperplate paper shall be of quality as good as the letter-press paper, of the same size, and of the proper thickness and qualities required for fine illustrations, and that the copperplate printing shall be done in the best manner. And the said parties of the first part further agree, that the page of printed matter shall be about five inches and three-quarters by nine inches, and that the binding shall be in cloth, gilt lettered, and of such material as shall cost thirty cents per volume. And the said parties of the first part agree to do the whole of the above work, including materials, at their own cost and expense.

And the party of the second part agree that they will furnish, at their own cost and expense, the entire illustrations for said work, including two perspective views of the Smithsonian Institution, and that the said illustrations shall be of such number and quality as shall cost one thousand dollars, and said illustrations shall be executed in the best style of art; and that as many of the said illustrations as are to be incorporated with the text shall be wood-cuts, and that the rest shall be either copperplate or steel engravings; and that they will deliver the same to the parties of the first part free of all charge, and completely ready for printing. And the said parties of the second part further agree that they will furnish to the parties of the first part the manuscript of the said work free of all charge, and that the same shall not exceed, including the appendix, one hundred and fifty printed pages.

And for and in consideration of the furnishing, by the said parties of the second part, of the illustrations and manuscript as aforesaid, the parties of the first part agree to deliver to the parties of the second part five hundred copies of the said work, complete and bound as aforesaid, so soon as the same can be prepared; and they further agree that, so soon as the sale of the said work shall have returned to them the cost of composition, printing, paper, and binding, then, out of the first profits of the same they the said party of the first part will further deliver to the parties of the second part additional copies of the said work until the said additional copies amount to five hundred, so that the whole number of copies furnished shall be one thousand in all, free of all charge to the parties of the second part.

And it is mutually agreed that after the delivery of the said thousand copies the said illustrations shall be and remain the property of the parties of the first part; but the said parties of the first part agree that they will at any time, on being thereto required by the parties of the second part, deliver to the said parties of the second part any number of impressions from any of the said plates at the cost of paper and printing.

And the said parties of the first part agree that so soon as the illustrations and manuscript are delivered to them, they will cause the said work to be published without unnecessary delay.

In testimony whereof, the parties of the first part have hereunto set their hands and seals, and the chairman of the said Building Committee has hereunto subscribed

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his name, on the behalf of the said Building Committee, the day and year above written.

ROBERT DALE OWEN,
Chairman, on behalf of Building Committee of Smithsonian Institution.

RATHBUN ALLEN,
Witness as to signature of Robert Dale Owen.

WILEY & PUTNAM.

WILLIAM B. GRAVES,
Witness as to signature of Wiley & Putnam.

The size selected is what is called long quarto, and its somewhat oblong shape is suitable for plates. The price stipulated for the paper, $6.40 a ream, insures its good quality. The size of the paper and of type, and the size of the printed page, were selected in part with reference to the probable form of our Transactions, which form, I think, might advantageously be copied, without variation, from this volume.

I found that no publisher would agree to deliver to us one thousand copies at once, nor until they had secured a return of the money actually expended by them. They were all of opinion that so large a number as one thousand copies distributed at the outset, would so injure the sale as to make it a losing business.

As it was necessary to obtain considerable assistance from Mr. Renwick, in preparing drawings for wood-cut illustrations, revising text, &c., I made a verbal agreement with him that, in return for such assistance as I might have occasion to require of him, he should receive twenty-five copies of the work out of the first five hundred, and twenty-five copies more out of the second five hundred received by us.

By these arrangements the entire sum of one thousand dollars, appropriated for the publication of this work, can be expended on illustrations, giving much increased value to it.

With a view still to increase that value, I took some steps which I hope will secure us additional illustrations executed in the best style.

Finding that the marble front of Stewart's new dry goods store in Broadway was probably the finest specimen of the modern Italian style of architecture in the United States, I procured an introduction to Mr. Stewart's partner, (Mr. S. being now in Europe,) and proposed to him that if he would expend $100 to furnish us an elevation of his store, on steel, we would afterwards, if he desired it, furnish him as many copies as he might require at the cost of paper and printing. He said he would write immediately to Mr. Stewart; that he did not doubt that he would agree to it. He is to communicate the result to Mr. Renwick, who will superintend the preparation of the plate.

I was also introduced by Mr. Renwick to the principal vestrymen of Grace church; and he expressed to me his hope that he could obtain from the vestry a vote for a similar plate of that church, a fine specimen of the latter or Flamboyant gothic.

I also commissioned Mr. Renwick, who is acquainted with some of the vestry at Trinity church, to see them, and try to obtain a plate of that edifice.

These plates, if obtained, would furnish excellent illustrations of the most suitable character, and give much additional character to the publication.

I called upon A. B. Durand, President of the Academy of Design, now a portrait and historical painter, and formerly the best engineer in the United States, and ascertained his opinion, that the best engravers, for portraits, in the United States are Cassilear, 22 Bleeker street, New York, and Cheeney, of Philadelphia.

He considers Roberts, of New York, the best wood-cutter. He thinks that to Cassilear or Cheeney the portrait of Smithson, for our Transactions, should be intrusted.

I called on Robert Schuyler, President of the Brunswick and New York Railroad, in regard to a season ticket, or free ticket, for our architect, Mr. Renwick. There is no chance of obtaining a free ticket. A season ticket at a reduced rate may possibly be obtained. Mr. Schuyler promised to write to me on the subject.

I did not, until further consultation, decide whether the perspective drawings of our Institution, &c., should be in quarto or double quarto form. The folding of the latter seems to me so objectionable, that I incline to the former, though it be somewhat small for so extensive a building.

Respectfully submitted, by

ROBERT DALE OWEN.

On motion of Mr. Seaton, it was—

Resolved, That the perspective views of the Institution, alluded to in the above report, be executed in quarto form.

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The chairman submitted from the superintendent the following communication:

APRIL 6, 1847.

DEAR SIR: On consulting with the Commissioner of Public Buildings in relation to the use, by the committee, of the old fence around the Mall, between Seventh and Twelfth streets, to enclose the lot of the Institution, between the same points, he agrees to allow so much of the same as is necessary for this purpose.

I have made an estimate to determine what the expense would be of removing, repairing, and enclosing this open fence with a five feet height of palings, and found it would amount to four hundred dollars.

The circuit of these grounds is 3,680 feet.

Mr. Dixon reports that the expense of conducting the water from the market-house pipe to the building, will cost six hundred and fifty dollars.

Respectfully submitted.

ROBERT MILLS,
Assistant Architect and Sup't Smithsonian Institution.

To the Hon. ROBERT DALE OWEN,
Chairman of the Building Committee of the Smithsonian Institution.

On motion of Mr. Seaton, it was—

Resolved, That, for the purpose of conveying to the building a supply of water, as well for the builders as for the permanent uses of the Institution, the consent of the Commissioner of the Public Buildings be requested for drawing a supply from the water plug at the Centre Market-house, to be conveyed thence, by a leaden pipe, to the Institution.

Resolved, That an arrangement be made with some responsible contractor for laying said pipes, provided the cost thereof does not exceed $650.

Resolved, That the resolution of the 30th ultimo, in regard to the digging two wells, be and the same is hereby, rescinded.

Resolved, That Mr. Downer, or some other responsible person, be employed to build a substantial paling fence around the Institution ground, provided the same cost not more than $400, and that the fence be as high as the present rails will permit with safety.

And, on motion, the committee adjourned.

Twenty-second Meeting, April 9, 1847.

Present, Messrs. Seaton and Owen.

Mr. Owen stated to the committee that he had spoken with one of the Regents, Mr. A. D. Bache, on the subject of procuring a steel plate of the Girard College, from the managers of the said Institution, on the same terms proposed to Mr. Stewart, as mentioned in his (Mr. O.'s) report of April 6; and that Mr. Bache promised to write on the subject to the principal manager of the Girard College, and to communicate the result to the committee.

Mr. Owen also stated that he had written on the same subject to Mr. Richard Rush, Regent, from Philadelphia, requesting him to use his influence to procure for us the said plate.

Mr. Seaton stated that he was about to write a similar letter to Mr. Ogden Hoffman, one of the vestrymen of Calvary church, New York, with the view of procuring a plate of that church on similar terms, as a specimen of the lancet gothic style of architecture; and that he would communicate the result to the committee.

Mr. Owen submitted from the contractor, Mr. Dixon, the following:

WASHINGTON, *April* 8, 1847.

GENTLEMEN: After minute examination of all the quarries on Mr. Peter's land, it is extremely doubtful to me whether or not a sufficient quantity of the stone on which the contract is based can be procured in any of his quarries, as that stratum seems to be nearly exhausted. There seems to be abundance of stone in the bed under which No. 19 has been worked off; but it appears to be of a much deeper color, and a great deal harder in its texture, and could not be cut at anything like the price of No. 19 stone.

There are, I am told, a great many quarries of sandstone on Seneca creek, on Mr. Vincent's* land; but knowing that your Board was about to adjourn, I hastened back to make this statement, and had not time to examine them.

Respectfully, &c., JAMES DIXON.

To the BUILDING COMMITTEE OF THE SMITHSONIAN INSTITUTION.

*Supposed Charles Vinson: see p. 43.—R. D. O.

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P. S.—If I am right in my opinion that the Bull Run quarries will not produce the stone that you have selected, it might be well enough for the Board, before their final adjournment, to pass a resolution to this effect: that some discretionary power be left with the architect to change or modify the material, otherwise the building would necessarily come to a stand; but this I leave to your better comprehension.

J. D.

Laid on the table.

Mr. Owen submitted from Mr. Joel Downer, carpenter, the following offer to put up a temporary fence around the grounds of the Institution:

WASHINGTON, *April* 8, 1848.

GENTLEMEN: I will contract to enclose the ground with a paling fence from five feet eight inches to six feet average; the palings to be sawed, three inches wide, of the best quality that comes to our market; the palings to be nailed on the rails with three nailings, and six nails in each paling, with a bottom board averaging 12 inches in width. It is understood that the posts and rails now standing on 12th street and B street are to be righted up and made use of; and the posts and rails for the north and east line are to be taken up from the public enclosure, and used for that purpose. I will put up the fence in a good and substantial manner for $400.

Respectfully, JOEL DOWNER.

To the BUILDING COMMITTEE OF THE SMITHSONIAN INSTITUTION.

[NOTE.—On inquiry, I learn that the above bid includes all materials, though not expressly so stated.

ROBERT DALE OWEN.]

Laid on the table.

Ordered, That, for the present, the services of Wm. McPeak, messenger, be dispensed with.

On motion of Mr. Owen—

Resolved, That the architect be authorized to cause to be erected on the ground a secure temporary building, as an office for the said architect, provided the same shall not cost over $200.

The chairman stated to the committee the request of Mr. Mills, the superintendent, that he be allowed the use of the lower rooms in the City Hall which were granted by the corporation to the Building Committee, until the same are required by the committee.

Ordered, That Mr. Mills be allowed the use of said rooms accordingly.

On motion of Mr. Owen, it was—

Resolved, That the city surveyor be requested to make out a plat of the grounds of the Smithsonian Institution, laying down the levels at each intersection of one hundred feet.

And, on motion, the committee adjourned.

Twenty-Third Meeting, *April* 10, 1847.

Present, Messrs. Seaton and Owen.

Mr. Owen submitted for consideration the following resolutions, relative to the work on "Public Architecture," of which the preparation had been intrusted to him:

Resolved, That the work on "Public Architecture," to be published by the committee, contain a comparative review of the advantages, economy, and facility of adaptation to modern purposes, of various styles of public architecture, particularly the Grecian, modern Italian, Gothic of different ages, and Norman; giving the actual cost, compared to extent of accommodations, of some of the principal public edifices in the United States, in the various styles, including some of the public buildings in Washington, and others erected by the General Government.

Resolved, That, so far as the funds permit, the said work contain illustrations, in the best style of art, representing such among the public buildings of the United States as exhibit the purest specimens of architecture, in various styles, including two perspective views of the Smithsonian Institution, on steel; one perspective view of the gothic plan submitted for competition by Mr. James Renwick, Jr., architect of the Institution; one perspective view of the Norman plan submitted by Mr. Haviland, provided he (Mr. H.) will, at his own cost, reduce the drawing to the required size; one perspective view either of the plan submitted by Mr. Arnot, or that submitted by Mr. Notman, provided the architect will, at his own cost, reduce

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the drawing to the required size; one geometrical elevation of the Italian plan submitted by Mr. Daniel, of Cincinnati, provided he will reduce the same; also ground plans and geometrical elevations of the Smithsonian Institution, and one or two interiors of the same.

Resolved, That application be made, in the proper quarters, for plates of the following public edifices, to wit:

1. Girard College.
2. Stewart's dry-goods store, Broadway, New York.
3. Grace Church, New York.
4. Trinity Church, New York.
5. Calvary Church, New York.

And if the respective authorities are willing to furnish such plates, without cost, then that the same be used in the said work, accompanied by a brief description of each edifice. And in that case, that the chairman of the Building Committee be empowered to agree with those furnishing the said plates, that the Smithsonian Institution will, at any time, furnish to them as many impressions from the plates thus furnished by them as they may desire, at the cost of paper and printing.

Resolved, That, if the funds permit, the said work contain a geometrical or perspective view of the east front of the Capitol of the United States, and a geometrical elevation of the south front of the General Post Office.

In submitting the above resolutions, Mr. Owen stated to the committee that it was his intention, in order as far as possible to avoid expense to the Institution, to prepare as much of the work as practicable at home, and for that purpose he would take with him a few works on architecture; but that it would be necessary for him to spend some weeks in New York, and probably in Washington, to consult authorities, to which he had not access at home, to receive the necessary aid from Mr. Renwick, and to take steps for the preparation of the illustrations.

The above resolutions, after deliberation, were adopted.

And, on motion, the committee adjourned.

Twenty-Fourth Meeting, April 11, 1847.

Present, Messrs. Seaton and Owen.

The chairman laid before the committee the following letter:

DARNESTOWN, MONTGOMERY COUNTY, MD.,
April 7, 1847.

DEAR SIR: Mr. Dixon was here yesterday, and made a superficial examination of the quarries, but made no selection, as you informed me would be his purpose, in your letter to me dated the 31st of March. He admitted, as I think must be apparent to any one, that stone of similar character with the specimen which he says the committee have adopted may be found in abundance for all your purposes. Indeed, upon examination we find it embraced in a much larger field than I had before observed, and I have no doubt it could be obtained to any extent that may be required.

The quarries, from the characteristic position of the stone and the partial manner in which they have been worked, present a different appearance from such as we commonly see; but as an evidence of the facility with which they may be worked, there is a party now engaged in getting stone from them for the use of Mr. Berry, who has contracted to deliver the same in Washington for twenty cents a cubic foot; and I have no doubt Mr. Dixon could get his stone delivered much more readily for the same, as the quantity he would require would justify the contractor in working the quarry to a much greater advantage.

I would only add that the kind of stone that I understand you have selected may be obtained here in any quantity you may require, and the difference in the expense of using it is a full justification for its selection.

I have been induced to make this communication to guard you against any unfavorable impression Mr. Dixon may be induced to make, in which I feel justified by expressions he used when here.

Yours, very respectfully, JOHN P. C. PETER.

Hon. ROBERT DALE OWEN,
Chairman of the Building Committee Smithsonian Institution.

Laid on the table.

Mr. Owen, in connexion with the subject of the above letter, stated to the committee that he had written to the architect, Mr. Renwick, informing him that the

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committee adhere to their resolution regarding the color and quality of building-material for the external walls, and look to him to see it strictly carried out.

The chairman laid before the committee, from the ex-messenger, McPeak, the following letter:

WASHINGTON, *April* 11, 1847.

SIR: Believing that I can render good service to the committee in my capacity as messenger, both in attending in the office and overlooking the grounds of the Institution, and removing nuisances, therefore I would respectfully offer my services to the committee at one dollar per day.

Respectfully, WM. MCPEAK.

Hon. ROBERT DALE OWEN,
Chairman of the Building Committee Smithsonian Institution.

Laid on the table.

And, on motion, the committee adjourned.

Twenty-Fifth Meeting, April 12, 1847.

Present, Messrs. Totten, Seaton, and Owen.

Mr. Totten, having returned from Mexico, took his seat on the committee.

The chairman laid before the committee several specimens of building-stone, similar in color and quality to specimen No. 19 of Dr. Owen's report on the sandstones of the Potomac, from the quarries of Charles Vinson, Seneca Mills; (see his letter to the Building Committee, page 612 of this journal.) The chairman stated that Dr. Owen had examined the specimens, and considered them equal to specimen No. 19.

The journal of the Building Committee, contract with James Dixon & Co., and specifications and plan of foundations of the building, prepared by the architect, were submitted to Mr. Totten, and examined by him.

Mr. Totten stated to the committee that the duration of his stay in Washington was uncertain, and that he might be called upon to visit some of the fortifications of the United States in the course of two or three weeks.

On motion of Mr. Owen, it was—

Resolved, That Mr. Renwick be requested to return to Washington within a fortnight, so as to confer on the subject of the details of erection of the building with Mr. Totten.

And, on motion, the committee adjourned.

Twenty-Sixth Meeting, April 14, 1847.

Present, Messrs. Seaton and Owen.

Mr. Seaton submitted to the committee the following letter from Captain Buckingham, whom he stated to be known to himself as having executed with faithfulness and ability, both for the city corporation and the Government, work of the same character as that for which he here proposes to contract:

WASHINGTON, *April* 14, 1847.

SIR: I have made a calculation of the expense of conducting the water from the Market square to the buildings of the Smithsonian Institution, on the mall.

I will agree to furnish all the necessary material, and put down the pipes to said building, for six hundred and fifty dollars, and take the necessary risk. I calculate that there are about 2,000 feet in all.

Respectfully, your obedient servant, C. BUCKINGHAM.

WM. W. SEATON, Esq.

Captain Buckingham appeared; and, on being questioned, informed the committee that his proposal was for a leaden pipe of inch-bore, and of the quality called "strong pipe;" that he proposed to lay the pipe down not less than two feet under ground, and to cross the canal with a two inch iron pipe, laid down below the bed of the canal.

On motion of Mr. Owen, it was—

Resolved, That a contract with Captain Buckingham be prepared, in accordance with the above offer; stipulating that the work be completed in one month from this date.

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The communication of William McPeak, laid on the table on the 11th instant being called up, it was—

Ordered, That William McPeak be re-engaged as messenger, to commence from the 7th instant, at six dollars per week.

Mr. French, Masonic Grand Master of the District of Columbia, appeared before the committee, and expressed, on behalf of the Grand Lodge of the District of Columbia, their willingness to assist in laying the corner-stone of the Smithsonian Institution with Masonic ceremonies,

On motion of Mr. Seaton, it was—

Resolved, That the Grand Lodge of the District of Columbia be invited, in connection with any other Masonic lodges who may unite with them, to aid in laying the corner-stone of the Smithsonian Institution; and that Saturday, the first day of May, be recommended as a suitable day for that purpose.

Resolved, That Mr. Owen be a committee to wait upon the President of the United States and invite him, as head of the corporation, to lay the said foundation-stone; and also to wait upon the Vice-President of the United States and invite his presence, as Chancellor of the Institution, to deliver a brief address on said occasion.

Resolved, That Mr. Seaton be authorized to pay any incidental expenses that may be necessarily incurred on said occasion.

Resolved, That the contractor be requested to prepare a suitable corner-stone.

Mr. Owen expressed to the committee his intention—as Colonel Totten has returned, and a quorum could thus be obtained without him—of returning, within a few days, home to Indiana; and his regret that, in consequence, he would not be able to be present at the proposed ceremony.

And, on motion, the committee adjourned.

Twenty-Seventh Meeting, April 15, 1847.

Present, Messrs. Seaton and Owen.

The chairman presented a contract with Captain Buckingham to convey water to the building site, which, in accordance with the resolution of yesterday, he had prepared and had submitted to Captain Buckingham and to Colonel Totten; both of whom had signified their approbation of it, and Colonel Totten had signed it.

It was approved and signed. It is as follows:

This agreement, made the fifteenth day of April, 1847, between Caleb Buckingham, of the city of Washington, of the first part, and the Building Committee of the Smithsonian Institution, of the second part, witnesseth:

That for and in consideration of the sum of six hundred and fifty dollars, to be by the party of the second part paid to the party of the first part, as hereinafter provided, the said party of the first part agrees to furnish all the necessary materials of the best quality, and all the necessary work, to be done in the best and most substantial manner, to conduct the water from the fire-plug at the engine house, in Market square, in the said city, to the building about to be erected for the Smithsonian Institution, on the mall, between 9th and 12th streets. And the party of the first part agrees, that he will lay down a leaden pipe of inch-bore, and of the quality called "strong pipe," at least two feet below the ground; and he will furnish the same with a stop-cock of the best quality, at the end where the said fire plug is tapped; and also a hydrant cock of the best quality at the end of the pipe next to the building. And the said party of the first part further agrees that he will convey the water across the canal in an iron pipe of two-inch bore, and of the best quality; which iron pipe shall be sunk below the bed of the canal. And the said party of the first part agrees, that he will conduct the said leaden pipe so as to terminate at any point, not more than fifty feet from the foundations of the building, that may be pointed out by the architect or superintendent of the Institution.

And the said party of the first part further agrees, that he will complete the laying of the said pipe, with its appurtenances, so that water can be used from the same one month from the date of this agreement.

And the party of the second part agree, that so soon as the said work shall have been completed to the entire satisfaction of the architect or superintendent of the said Institution, and the said architect or superintendent shall have certified that fact to the parties of the second part, the said parties of the second part will pay to the said party of the first part the above sum of six hundred and fifty dollars. In testimony whereof, the said party of the first part has hereunto set his hand and

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seal, and the said Building Committee, on behalf of the said Institution, have hereunto subscribed their names, the day and year aforewritten.

C. BUCKINGHAM, [L. S.]
ROBERT DALE OWEN,
J. G. TOTTEN,
W. W. SEATON,
} *Building Committee.*

The chairman presented from Mr. Randolph Coyle, city surveyor, a chart of the grounds belonging to the Institution, crossed with lines of equal levels marked at each crossing of one hundred feet.

Ordered, That the above chart be preserved as a record of levels, by inserting it in the journal of the committee.

The chairman stated to the committee that he had waited upon the President, in accordance with the resolution of yesterday, and expressed to him the desire of the committee that he would consent to lay the corner-stone of the Smithsonian building; and that he, the President, has expressed his willingness to do so.

The chairman further informed the committee that the President stated to him that he (the President) would order the attendance of the marine band on the occasion.

The chairman stated to the committee that he had waited upon the Vice President, in accordance with the resolution passed yesterday, and that he (the Vice President) promised, if he could so arrange his business, to attend on the occasion of laying the foundation-stone of the Smithsonian building, and to deliver a brief address on that occasion.

And, on motion, the committee adjourned.

Twenty-Eighth Meeting, April 16, 1847.

Present, Messrs. Seaton and Owen.

The letter of Mr. Joel Downer, carpenter, dated April 8th, and submitted to the committee at their twenty-second meeting, coming up for consideration, Mr. Owen submitted a contract which he had prepared in accordance with the offer made by Mr. Downer for the erection of a temporary fence around the grounds of the Smithsonian Institution, and which he stated to the committee had been submitted to the superintendent and Mr. Downer, and had been approved by them.

The said contract was approved, and signed by the committee and by Mr. Downer, and is as follows:

This agreement, made the 16th of April, 1847, between Joel Downer, of the city of Washington, of the first part, and the Building Committee of the Smithsonian Institution of the second part, witnesseth:

That for and in consideration of the sum of four hundred dollars, to be by the party of the second part paid to the party of the first part, as hereinafter provided, the party of the first part agrees to fence in the lot or plat of land belonging to the said Smithsonian Institution, and situated on that portion of the mall which lies between 9th and 12th streets, containing 19 acres or thereabout; the said fence to be made in the most substantial and workmanlike manner, and to be completed in one month from the date of this agreement. And the said party of the first part agrees that the said fence shall be of sawed paling, of the best quality that comes to the Washington market, each paling to be about three inches wide, and to be nailed on the rails with three nailings, and six nails to each paling, and the pailings not more than two and a half inches apart.

And the said party of the first part further agrees, that the said fence shall have a bottom board averaging twelve inches in width, firmly nailed on, and the ground levelled up to the bottom of the same.

And the said party of the first part further agrees that the said fence shall be from five feet eight inches to six feet high, and that the posts shall be well and securely set in the ground, and that the fence shall stand, as nearly as convenient, on the boundary of the said lot, except on the north side; on which north side the fence shall be placed fifteen feet north of the boundary-line of the land of the said Institution. And the said party of the first part agrees that he will furnish all the materials whatever for the said fence: *Provided, however*, That the posts and rails now standing on 12th street and on B street south may be used by the said party of the first part. *And provided further*, That in case the Commissioner of Public Buildings consent thereto, the posts and rails now standing on such portion of the mall as lies between

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7th and 12th streets, and is not the property of the said Institution, may also be used by the said party of the first part as part of the material of said fence.

And the party of the first part further agrees that he will leave openings for gates in the said fence, at such points as may be pointed out by the contractor or superintendent; but no gates are included in this contract.

If there be not sufficient rails on the said lot from between 7th and 12th streets, then the contractor, Mr. Dixon, will furnish the same to the party of the first part, as per annexed agreement.

And the party of the second part agree, so soon as the said fence shall be completed to the full and entire satisfaction of the architect or superintendent of the Smithsonian Institution, and that fact shall have been certified to the parties of the second part by the said architect or superintendent, that they, the said parties of the second part, will pay to the party of the first part, in full for said fence and material, the sum of four hundred dollars.

In testimony whereof, the said party of the first part has hereunto set his hand and seal, and the said parties of the second part, members of the said Building Committee, have hereunto, on behalf of the said Smithsonian Institution, subscribed their names the day and year aforewritten.

JOEL DOWNER, [L. S.]

ROBERT DALE OWEN,
JOS. G. TOTTEN,
W. W. SEATON,
} *Building Committee.*

Agreement with Mr. Dixon, referred to in the foregoing contract.

If the old rails now standing on the mall between 7th and 12th streets be not sufficient to complete the fence around the grounds of the Smithsonian Institution, I hereby agree to furnish to Mr. Joel Downer, at my own cost, a sufficient number of good rails to make up the deficiency. I also agree to have made, at my expense, not less than two gates, at convenient points in said fence, to be hung on good and substantial gate-posts.

JAMES DIXON.

Mr. John P. C. Peter appeared before the committee, and reiterated in presence of the contractor, Mr. Dixon, his (Mr. Peter's) complete assurance, as formerly expressed in his letter, (page 121,) that there was in his Bull run quarry a sufficiency of rock to erect the buildings of the Smithsonian Institution, of a tint not darker than No. 19 of the specimens appended to Dr. Owen's report on the Potomac sandstones; a portion being of lighter tint. He was informed that the committee adhered to their decision not to use for the external walls any material darker than No. 19, but they did not object to some portions of the building being of a lighter shade. He was further informed that the architect, Mr. Renwick, and perhaps one of the committee, would shortly visit Bull run quarry, for the sake of ascertaining, by actual excavation and otherwise, whether the supply from the stratum in question was sufficient.

And, on motion, the committee adjourned.

Twenty-Ninth Meeting, April 17, 1847.

Present, Messrs. Seaton and Owen.

On motion of Mr. Seaton, it was—

Resolved, That the Corporation of the city of Washington, the Independent Order of Odd-Fellows, the volunteer companies, and the citizens generally, be invited to join in the ceremony of laying the foundation stone of the Smithsonian Institution.

The chairman stated to the committee that he had consulted Mr. Drayton as to the actual size which the plates of the proposed volume on architecture might be made, so as to leave adequate margin; and that it was found that they might be *eleven inches by seven inches*, (or, if necessary, eleven inches by seven inches and a half.)

Mr. Owen stated to the committee that he had written to Mr. Renwick; instructing him to cause the perspective views of the Smithsonian Institution to be of that size.

The chairman submitted an inscription, prepared by the superintendent, for a plate to be placed under the corner-stone of the Smithsonian building.

It was adopted, and is as follows:

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Inscription for the foundation-stone of the Smithsonian Institution.

On the first day of May, 1847, was laid, in the city of Washington, this foundation-stone of a building to be appropriated for the Smithsonian Institution;

FOUNDED BY BEQUEST OF JAMES SMITHSON, OF GREAT BRITAIN.

JAMES K. POLK, *President of the United States.*

CORPORATION.

President of the United States.
Vice President of the United States.
Secretary of State.
Secretary of the Treasury.
Secretary of War.
Secretary of the Navy.
Postmaster General.
Attorney General.
Chief Justice.
Commissioner of Patents.
Mayor of the City of Washington.

OFFICERS.

George M. Dallas, *Chancellor.*
W. W. Seaton, Chairman,
Jos. G. Totten,
Robert Dale Owen,
} *Executive Committee.*
Joseph Henry, *Secretary.*
Charles C. Jewett, *Assistant Secretary.*

BOARD OF REGENTS.

George M. Dallas, Vice-President.
Roger B. Taney, Chief Justice.
W. W. Seaton, Mayor of the City.
Lewis Cass, U. S. Senator.
Sidney Breese, U. S. Senator.
James A. Pearce, U. S. Senator.
Robert Dale Owen, U. S. Representative.
Wm. J. Hough, U. S. Representative.
Henry W. Hilliard, U. S. Representative.
Rufus Choate, Massachusetts.
Richard Rush, Pennsylvania.
Gideon Hawley, New York.
Wm. C. Preston, South Carolina.
A. Dallas Bache, National Institute.
Jos. G. Totten, National Institute.

BUILDING COMMITTEE.

Robert Dale Owen, Chairman.
Jos. G. Totten.
W. W. Seaton.

James Renwick, jr., *Architect.*
Robert Mills, *Assistant Architect and Superintendent.*

On motion of Mr. Owen, it was—

Resolved, That the superintendent be authorized to contract for the engraving of said plate, at an expense not exceeding fifteen dollars.

And, on motion, the committee adjourned.

Thirtieth Meeting, April 19, 1847.

Present, Messrs. Seaton and Owen.

The chairman laid before the committee, from Dr. Owen, the following communication relative to details of arrangements in the laboratory:

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AUGUST 17, 1847.

GENTLEMEN: Several details connected with the arrangement of the laboratory of of the Smithsonian Institution have recently occurred to me, or been suggested by conversation with gentlemen experienced in chemical manipulation. I place them at your disposal, in case you may see fit to adopt all or any of them.

I advise that the sliding doors between the laboratory and lecture-room be of sheet copper, blackened, so that they may serve as black boards for the purpose of illustration.

Pulleys in the ceiling of the laboratory, behind the lecturer's table, will be found very convenient to suspend illustrations, so that they can be raised or lowered. Black boards of blackened sheet copper or iron, in nests or sets to slide one behind the other, will be found extremely useful to the lecturer, thus suspended by pulleys.

The floor of the laboratory may advantageously be covered with thick sheet zinc.

The roof of the laboratory is best covered with slate, as the rain-water caught from a slate roof is purer than from a metal one.

The tops of all the tables in the laboratory, including the narrow tables below the shelving, should be of serpentine, and from one to two inches thick. Serpentine can be procured from Proctorsville, Vermont. Even the tops of the tables to hold the balances are best of this material. It is not acted upon by acids; that is, the Vermont variety.

The flues of the furnace over the hot air chambers should be of half-inch soapstone slabs.

There should be in the basement, gasometers for hydrogen or carburetted hydrogen —very convenient in organic analyses.

The air should be admitted above the ash-pits in the cellar; for if it be not, the ashes blow up with the draught.

The furnace flues should all be smoothly plastered inside, especially those of furnaces to raise high temperature. For such furnaces Dr. Jackson, of Boston, recommends flues tapering from below upwards, the larger flues being a little over 12 inches in the basement, and tapering to nine inches at top; and the area at top being somewhat greater than that of the flue throat next the furnace. He is of opinion that by this form of flue, the *lateral* currents of cool air that usually pass down chimneys are prevented, and thus all the cold air must pass through the furnace. I have tried the plan, and they draw well.

It is unnecessary to line the flues with fire-brick, except at the throat leading from the furnace.

Every table, both in the laboratory and in the working laboratory, should be furnished with a blast pipe, proceeding either from a large bellows in the basement, or a small bellows fixed under the table, or a condensing syringe.

If, in the course of the erection of the Smithsonian laboratory, I can be of any service in furnishing further details, I shall do so with pleasure, if written to on the subject; and to avoid misapprehension, I may add, without any charge to the Institution.

I regret that my occupation as geologist of Wisconsin is likely to take me to so great a distance from your city, that I shall have little chance to aid by personal supervision, as otherwise I should have been happy to do.

Respectfully submitted, by DAVID DALE OWEN.

To the BUILDING COMMITTEE OF THE SMITHSONIAN INSTITUTION.

On motion, the above communication was referred to the architect of the Institution.

Mr. Renwick, the architect, appeared before the committee, and stated that it was probable that plates of Grace church, and of Trinity, could be procured, if he (the architect) were authorized, by resolution of the committee, to make application for the same.

On motion of Mr. Owen, the following preamble and resolution were adopted:

Whereas it has been represented to this committee that some members of the vestry of Trinity church, New York, have liberally expressed their willingness to furnish to the Smithsonian Institution a plate on steel or copper, containing a perspective view of Trinity church, to be printed in the forthcoming volume on Public Architecture, about to be published by this committee; Therefore,

Resolved, That Mr. James Renwick, architect of the Smithsonian Institution, be and is hereby authorized, on behalf of the said Institution, to state to the said vestry that if they decide to furnish said plate, it will be accompanied in the said volume with a description of Trinity church, as exhibiting the best example in the United

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States of the style of architecture in which it is erected; and that the Building Committee, if thereto required by the above vestry, will furnish to them, at any time, as many impressions from the said plate as they may desire, at the cost of paper and printing.

And, on motion, the following additional preamble and resolution were adopted:

Whereas it has been represented to this committee that some members of the vestry of Grace church, New York, have liberally expressed their willingness to furnish to the Smithsonian Institution a plate on steel, containing a perspective view of Grace church, to be printed in the forthcoming volume on Public Architecture, about to be published by this committee: Therefore,

Resolved, That Mr. James Renwick, architect of the Smithsonian Institution, be and he is hereby authorized, on behalf of the said Institution, to state to the said vestry that if they decide to furnish said plate, it will be accompanied in the said volume with a description of Grace church, as exhibiting the best example in the United States of the style of architecture in which it is erected, and that the Building Committee, if thereto required by the above vestry, will furnish to them, at any time, as many impressions from said plate as they may desire, at the cost of paper and printing.

And, on motion, the committee adjourned.

Thirty-First Meeting, April 20, 1847.

Present, Messrs. Totten, Seaton, and Owen.

The architect appeared before the committee, and the various specifications, especially those connected with the foundations of the building, having been revised, the following items in regard to the same were agreed to:

That the concrete, as given in the specifications, is unnecessarily rich in mortar, and that about 14 parts of stone or brick fragments to two of dry cement, and one of lime paste, and eight of sand, is a suitable composition.

That the concrete under the foundation be laid in two steps, and in six-inch courses.

That a bench mark be set up in some convenient spot in the vicinity of the building, for permanent reference.

That when the foundations are excavated, they be tried with a rammer; and if any impression be produced, that the bottom be thoroughly rammed.

That the architect ascertain from the contractor, and report to the committee, what sum would be saved by substituting two-inch furring and lathing for the brick lining wall; the flues being sunk to a sufficient additional depth in the wall,

That a pattern of the jamb of one window, and of such other portions of the cut-work of the building as may be designated by the architect, be prepared as a sample; and, after being approved, be preserved for reference.

On motion of Mr. Owen, the following preamble and resolution were adopted:

Whereas it has been represented to this committee that one of the partners of the firm of Alexander T. Stewart & Co., of New York, has signified the probability that the said firm might supply an elevation, on steel or copper, of the front of their marble store in Broadway, to insert in the volume on Public Architecture about to be published by this committee: Therefore,

Resolved, That Mr. James Renwick, architect of the Smithsonian Institution, be and he is hereby authorized, on behalf of the said Institution, to state to Messrs. Stewart and Company, that if they decide to furnish said plate, it will be accompanied in the said volume with a description of their store, as exhibiting the best example in the United States of street architecture in the modern Italian style; and that the Building Committee, if thereto required by Messrs. Stewart and Company, will furnish to them, at any time, as many impressions from the said plate as they may desire, at the cost of paper and printing.

The committee then adjourned to the building site belonging to the Institution, where they found the excavation for the foundations of the east or chemical wing commenced, examined the character of the ground, as shown in a square trench dug for the purpose of ascertaining its character; and decided that the foundations as specified in the contract were sufficient.

The committee then returned to the City Hall; and, on motion, adjourned.

Thirty-Second Meeting, April 21, 1847.

Present, Messrs. Seaton and Owen.

The chairman laid before the committee, from the president of the Chesapeake and Ohio Canal Company, the following letter, received to-day:

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FREDERICK, *April* 20, 1847.

DEAR SIR: As promised in my former letter, I laid your proposal for the reduction of the toll on stone for the use of the Smithsonian Institution before the board of president and directors of the Chesapeake and Ohio Canal Company, at their meeting on the 10th inst., and now apprize you that, whilst the board entertain the best wishes for the success of the great undertaking you have in charge, they yet feel constrained to decline making the reduction suggested.

As I mentioned in my letter to you, the cost of transportation on the canal, estimating the toll by the perch, as is the practice on our canal, is at present much less than the rival improvement you allude to, and I hope this consideration will suffice to determine you in favor of the Seneca quarries.

With great respect, yours, &c., J. M. COALE,
President of the Chesapeake and Ohio Canal Co.

On motion, the letter was referred to the contractors, Messrs. Dixon and Cameron.

The chairman stated to the committee that he should set out to-morrow morning for the west; but if, at any time during the summer, his presence should become necessary on the committee, he would endeavor to return at as short a notice as possible.

And, on motion, the committee adjourned.

Thirty-Third Meeting, May 1, 1847.

Present, Messrs. Seaton and Totten.

On motion, it was—

Resolved, That William Beverly Randolph be appointed marshal-in-chief during the ceremonies of the day.

And then, this being the day appointed to lay the corner-stone of the building destined to be occupied as the Smithsonian Institution, the committee adjourned to join in its ceremonies; of which the following description is extracted from the National Intelligencer:

CEREMONIES AT LAYING THE CORNER-STONE.

"Early in the morning the banners in front of the City Hall and at other public places gave indication of a holiday and a day of public rejoicing. At nine o'clock the volunteer companies, under the command of Captain Tucker and Lieutenant Tate, were formed at their respective parade grounds, near the City Hall. At about the same hour the cars arrived from Baltimore, bringing hither a large delegation of the Free Masons of Baltimore and Philadelphia, to unite with their honored brethren in this District in the grand and interesting ceremonies of laying the foundation of an institution whose object is the 'increase and diffusion of knowledge among men.'

"At ten o'clock the members of the various lodges of Free and Accepted Masons of the District united with the delegations from Maryland and Pennsylvania, and took the station assigned them in the order of the procession by the marshal-in-chief, Wm. Beverly Randolph, Esq., who appeared, as most of the assistant marshals, in appropriate badges. The Masonic part of the procession was unusually grand. We never witnessed so numerous a turn out in this city of that ancient and respectable fraternity, who embrace in their body, persons of every condition in life and of all countries. The Philadelphia delegation, headed by Colonel James Page, Grand Master of Pennsylvania; the Baltimore delegation, headed by Charles Gilman, Esq., Grand Master of Maryland; and the Washington, Georgetown, and Alexandria delegations, headed by B. B. French, Esq., the popular Grand Master of the District of Columbia; all these functionaries, and several other officials whose names we do not know, with the long line of members in full regalia, with their splendid banners and emblems, presented a very interesting and imposing spectacle.

"Not less so the very numerous and respectable body of the Independent Order of Odd Fellows, comprehending many of the lodges of this District. The Odd Fellows, by their number, splendid regalia, banners, emblems, excellent music, and rich costume, added greatly to the imposing appearance of the interesting pageant. Dr. W. B. Magruder, splendidly decorated, acted as grand marshal of the Odd Fellows, whose chief officers are Dr. Joseph Borrows, Grand Master, and Dr. Flodoardo Howard, Deputy Grand Master, who appeared in their proper places, supported by other prominent officers and members of the Order.

"The procession (formed agreeably to the programme of the day) moved from the City Hall to the President's House about 11 o'clock. The marshal-in-chief and his aids were all on horseback, and wore white scarfs and blue rosettes. Three bands of

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music accompanied the procession, which was more than a mile in length. Of the music we cannot avoid saying that it was excellent. The marine band is uniformly so. The national brass band, recently formed under Mr. Massoletti, played admirably. Garcia's band, from Alexandria, attracted particular attention by its excellent performances. This band, being uniformed, was taken by several persons for Deem's celebrated Baltimore band; a great compliment truly.

"The column moved down 4½ street to Pennsylvania avenue, then up the avenue to Seventh street, up Seventh to E, up E to Eleventh, up Eleventh to F, and thence on F to the Presidential Mansion, where the President, heads of departments, diplomatic corps, &c., were received into the line. The entire column then moved by Pennsylvania avenue and Twelfth street to the site of the Smithsonian Institution.

The military was then formed in line on the south side of the site, and the President, heads of departments, diplomatic corps, Regents, mayor and corporation of Washington, &c., passed in front, receiving their salute, and repaired to an elevated platform erected for the occasion near the corner-stone, and beautifully arched and decorated with festoons and wreaths of flowers and evergreens.

"The column then opened to the right and left, and the Masonic bodies, preceded by the Grand Master of the District of Columbia, passed up the line to the corner-stone.

"The Masonic ceremonies were then performed, for the details of which we are indebted to an official source, as follows:

"Proclamation for silence having been made by the Grand Marshal, B. B. French, Esq., the Grand Master, accompanied by James Page, Esq., the Grand Master of the Grand Lodge of Pennsylvania, and Charles Gilman, Esq., the Grand Master of the Grand Lodge of Maryland, took his stand at the corner-stone, and, having announced the object of the meeting, called upon the Grand Chaplain of the Grand Lodge of Maryland, Brother McJilton, to address the Throne of Grace, which he did, as follows:

"PRAYER.

"O Lord God of nations! There is none like thee in heaven nor in earth; which keepeth covenant, and showeth mercy unto thy servants that walk before thee with all their hearts. Thou hast kept with thy people that which thou hast promised them in all generations; and that which thou hast spoken with thy mouth thou hast fulfilled with thy hand even unto this day. (2 Chron. vi, 14, 15.) As thou didst with thine ancient people Israel, of small beginning, thou hast raised up a mighty nation in this western world. By thy power it has prospered; by thine arm it has been begirt with strength; by thine hand it has been overstrewn with blessings.

"Few in number, and feeble in strength, our fathers came upon these shores. They hewed themselves a home in the wilderness, and sat down weary and toilworn amid the wilds of the forests. But they abode beneath the shadow of the Almighty. (Ps. xci, 1.) Thou wast to them as rivers of water in a dry place, and as the shadow of a great rock in a weary land. (Isa. xxxii, 2.) Thou gavest them rain in season. The land yielded her increase, and the trees of the field yielded their fruit. The threshing reached unto the vintage, and the vintage to the sowing time. They did eat their bread to the full, and dwelt in the land in safety. When their enemies rose against them, thou wast the shield of their defence. In thy strength they had power to overcome, and their foes fled before them. Thou gavest them independence and peace, and madest them to lie down in safety, with none to make them afraid. Thou didst set up thy tabernacle among them; thou didst break the bands of their yoke, and made them to go upright and free. (Lev. xxvi.)

"Thy second Israel has been greatly blessed at thy hands. Thou hast given her plenty of corn and wine. Thou hast made peace in her borders, and filled her with the finest of the wheat. Thou hast strengthened the bars of her gates, and blessed her children within her. (Ps. cxlvii, 13, 14.) Thou hadst respect unto our fathers. Thou madest them to be fruitful, and didst multiply their prosperity. Thou didst establish thy covenant with them. Under thy fostering care the land became the heritage of freedom, the asylum of the oppressed, the home of the stranger, a blessing to the nations. The gloomy clouds of ignorance and superstition are resting darkly upon other lands; but the sun of enlightenment and religion is beaming brilliantly upon ours. The shackles of civil bondage are binding the nations of the east, and they bow in their captivity to the despot's iron rule; but no fetters of oppression bind the free of this favored land. Civil discord has reared its hydra head, and rent asunder the bond that united other States, but ours is unharmed, and no enemy appears that has power to sever it. The pestilence with fearful step has

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trodden other shores, and desolation fierce and fell has marked its direful way; but the rude form of the ravager has not reached our favored clime, and the trail of his burning footstep is not found upon our soil. The famine has marred the beauty of a sister land, and the shrill cry of the suffering still rises from the soil that is made desolate by its terrible tread; but our barns are yet full of the harvest's yield. We have enough and to spare. While the oppressed can find a home of happiness in our wide domain of liberty, we have bread for the starving, and our ships are bearing it to the sufferers beyond the seas. Truly the Lord has been good to us. He has remembered us in mercy; he has rewarded us beyond our deservings.

"And now, O Lord God of nations, that hast so highly favored and so greatly prospered the people of this land, hear thou in heaven, thy dwelling place, the cry and the prayer of thy servants when they pray before thee, that thy fatherly care and protection may be continued over us; that thy power may still be our prosperity, thine arm the girdle of our strength, thy hand the security of our blessing.

"Let thy mercy cover our sins; for we must acknowledge that, like lost sheep, we have erred and strayed from thy righteous ways. We have departed from the path of thy holy commandments, and we have done evil in thy sight. Give us true repentance for our many and grievous offences. Overrule the rebellion of our hearts, and the disobedience of our lives, by the interposition of thy abounding mercy, and let not our guilt be visited in merited vengeance upon us.

"May we never, either in word or deed, deny the Lord, nor neglect his sacred worship. But may his blessed name, his doctrine and worship, be so inwoven with our institutions of freedom, that the names of American and Christian may ever be one and inseparable. As a nation, as well as individuals, may we spurn the creeds of infidelity, and in the acknowledgement of the Divine authority supplicate the overruling providence of God, remembering always that it is He that maketh us to differ from others, and that crowneth us with mercy and loving kindness.

"Grant us wisdom, and purity, and integrity of purpose, that we may preserve unhurt the inheritance of freedom that our departed sires have bequeathed us. May it be nothing impaired, nothing dimmed, but strengthened and brightened by our having used it and enjoyed its blessings. And may we deliver it to the succeeding generation as spotless as we received it; as beautiful, as rich a treasure, as it came to us, drenched in the blood and crowned with the victorious bays of two fierce ensanguined wars.

"In the day of battle thou has been our defence, and our enemies have not triumphed over us. In the face of our foes thou hast 'redeemed us from the sword,' (Job. v, 20,) and no weapon formed against us has prospered. So be it ever, when the hand of dishonor shall assail us, or the rod of the oppressor be uplifted to our hurt.

"In peace may we possess our territory. Do thou make the shout and the noise of the battle to cease from our shores, and may friendship and love and righteousness prevail. Make us to know that wisdom is better than weapons of war, and a peaceful heritage than much spoil. May the spear of the warrior be speedily exchanged for the plow and the pruning-hook, and the dread thunder of battle for the shout of thanksgiving to God.

"Guide us ever in the choice of our rulers, that the wisdom and virtue of the nation may appear in the characters and deeds of those who may be honored with majesterial distinctions. May the praise which is sounded by thy Church be echoed from the high places of the Republic, and re-echoed from the multitudes of the people, until, like the rushing of many waters, the voice shall go forth proclaiming the Lord Omnipotent to be our God. And in the pursuits of our lives, in the expressions of our lips, and in our daily worship, may we prove that we know no other God but him.

"With thy favor we beseech thee to behold and bless thy servant, the President of the United States, and all others in authority, and so replenish them with the grace of thy holy spirit, that they may always incline to thy will and walk in thy way. Teach thou our Senators wisdom, that they may establish such laws as are wholesome and good. Direct thou the minds of our judges, that they may decree justice, and that their judgments may be rendered with equity. Imbue the people with a spirit of patriotic devotion, and enlighten them with heavenly wisdom, that they may be zealous of their country's honor, and exercise with prudence the fearful trust of freemen which is committed into their hands. Make us a people fearing thee and honoring thy most holy name; loving each other as brethren, and living for the good of mankind.

"We invoke thy blessing upon this present undertaking of thy servants. Grant that the structure here commenced under the eye, and, we trust, by the direction of

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thy Providence may be reared up in thy name, and redound to thy glory. May the building here to be erected as a depository of the curious works of art and nature, and emblems of national distinction, be more than sufficient for this worthy and honorable purpose. May it become a monument of usefulness to us as a nation, and a matter of admiration to the nations of the world. In the deposit of national symbols, may it be a central point of peace and friendship for the kingdoms and governments of the earth. And may the nations which shall be represented in its halls find themselves in union, firmly leagued for the encouragement of national prosperity, the promotion of art and intelligence, and the increase of human happiness. May it be as a central sun of science, about which systems may revolve, and from which light and knowledge may be reflected throughout every clime and kingdom of the globe. And, in the accomplishment of these great and important results, may the blessings of the nations follow the memory of the projector, and America become the almoner of a bounty whose benefits shall not cease to flow until time shall be no more.

"In all our civil and domestic relations may we remember our religious duties, and contribute of our means and services and characters to the increase of thy Church, and the advancement of thy glory; that we may be a people truly serving thee, honoring thy name in our walks and works of righteousness, and in the possession of happiness under thy smiles and favor.

"Let thy priests, O Lord, be clothed with righteousness, and thy saints rejoice in goodness. (2 Chron. vi, 41.) Let thy way be known in all the earth, thy saving health among all nations.

"Grant that the course of this world may be so peaceably ordered by thy governance, that thy Church may joyfully serve thee in all godly quietness; that thy people may walk in the ways of truth and peace, and at last be numbered with thy saints in glory everlasting.

"Hearken, O Lord God, we beseech thee, to the prayers and supplications which we have now presented before thee. And let it be thy good pleasure to grant us our requests, which we offer in the name and through the merits of thy son Jesus, and our Lord, to whom, with thee and the Holy Ghost, be all honor and glory: world without end. Amen.

"There was then deposited in a cavity in the corner-stone a leaden box, containing the following articles, viz:

"The gold and silver coins of the United States; report of the Committee on Organization; Constitution of the United States; the New Testament; Declaration of Independence; Congressional Directory for 1847; Bulletins of the National Institute; report of the first National Fair at Washington; report of the United States agent appointed to receive the legacy of James Smithson; medal portrait of James Smithson; reports of the Commissioner of Patents; journal of the proceedings of the Board of Regents, 1846; with the previously described engraved plate.

"The address of the Chancellor of the Institution on laying the corner-stone; astronomical observations made at the National Observatory; a copy of the Directory of the city; the city newspapers of the day.

"There was also deposited in the same cavity, by the Free Masons, a leaden casket containing the following articles, viz:

"An elegant copy of the Holy Bible, presented by the Rev. Charles A. Davis, on behalf of the Bible Society of Washington; a stereotype page of Bancroft's History of the United States; Constitution of the Grand Lodge of the District of Columbia; an impression of its seal in metal; a copy of its proceedings for 1846; a silver plate, inscribed with the names of the Grand and Subordinate Lodges of the District.

"The Grand Master then applied the square, level, and plumb, and pronounced the stone properly squared, duly laid, *true and trusty*.

"He then proceeded to place upon the stone the corn, wine, and oil, preceding this ceremony by an appropriate explanation of their symbolic meaning, concluding his remarks by the following quotation from the venerable Harris: 'Wherefore, brethren, do you carry corn, wine, and oil in your procession, but to remind you that, in the pilgrimage of human life, you are to impart a portion of your bread to feed the hungry, to send a cup of your wine to cheer the sorrowful, and pour the healing oil of your consolation into the wounds which sickness hath made in the bodies of affliction rent in the hearts of your fellow-travellers.'

"Upon pouring the *corn* upon the stone, the Grand Master said: 'I do this, expressing a hope that the hearts of those who are charged with carrying into effect the intentions of the generous donor whose legacy has established the Smithsonian Institution, may be strengthened in the performance of all their duties.' In pouring

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thereon the *wine*, the Grand Master said: 'May the Regents of this Institution, and all connected therewith, be cheered onward and rejoice in the success of all their measures connected with the erection of this building, and with the government of the Institution.' In pouring the *oil* upon the stone, he said: 'May harmony, peace, and brotherly love prevail among all connected with the Smithsonian Institution, and may they witness the placing of the capstone of the complete edifice under circumstances as propitious as those which attend the present ceremonies.'

"The Grand Master then informed the assembled multitude that he held in his hand the identical gavel used by the immortal Washington in conducting the Masonic ceremonies upon laying the corner-stone of the Capitol of these United States—this happy and glorious Union, which had now so greatly extended, and was still extending, so that no man could foresee its magnitude or its power. He also stated that he had the honor then to wear an apron worn upon the same occasion by the Father of his Country, which was presented to Washington by the Grand Lodge of France, through that great and good patriot and Mason, General Lafayette. This apron, he said, had been in possession of Mount Nebo Lodge, of Shepherdstown, Virginia, for many years, and that that lodge had kindly delegated a brother, S. McElroy, Esq., to bear the apron to this city, and to present it to the Grand Lodge, with a request that it be worn by the Grand Master on this occasion, which he had done at the meeting of this morning.

"The Grand Master then gave three raps upon the stone with the gavel of Washington, the Masonic brethren gave the grand Masonic honors, and the Masonic ceremonies were concluded.

ADDRESS BY HON. GEO. M. DALLAS.

"Mr. Dallas, the Chancellor of the Board of Regents, then rose and delivered the following address:

"*Friends and fellow-citizens:* It has been deemed proper, that, at a ceremony so interesting as the present to the Smithsonian Institution, its chief officer should make to you a few general remarks explanatory of its origin, its purposes, its plans, and its prospects. Let me, therefore, ask your attention while I undertake that duty.

"The Congress of the United States, by an act passed on the 10th of August last, organized '*an establishment*,' through the instrumentality of which to apply faithfully to its directed objects a legacy of five hundred thousand dollars, received by our Government under the will of a philosophic and benevolent Englishman. This '*establishment*' is composed of our highest public functionaries for the time being: the President, the Vice-President, the Chief Justice, and the Heads of the six Executive Departments, with the Commissioner of the Patent Office and the Mayor of Washington; and, as the active council of management, a board is created of fifteen, known in the act by the scholastic name of 'Regents,' one-fifth of them chosen by the Senate, another fifth by the House of Representatives, and of the remainder, two-fifths, by the joint action of both legislative chambers. It is to accommodate this imposing agency, to give it permanent and suitable means with which to effectuate its important and various purposes, and to shelter as well as exhibit its collections and property, that Congress enjoined to be erected, 'of plain and durable material and structure, without unnecessary ornament,' the edifice whose corner-stone you have seen deposited.

"James Smithson, a Londoner born, and claiming to be the son of a distinguished nobleman, gave his life exclusively to intellectual pursuits, and especially to researches in physical and experimental science. Supplied with larger means than his wants required, and steadily practising a strict scheme of personal economy, he amassed considerable fortune. He died at Genoa in 1829, and, by his will, bequeathed his accumulated property to this Union—a country that, notwithstanding his frequent change of abode, he had never visited, whose citizens he had never associated with, but in whose inevitable future he saw the most solid ground on which to cast the anchor of his fame. This legacy, for some time the subject of litigation in the British Court of Chancery, was finally secured, brought over, and received into the treasury of the United States on the 1st of September, 1838. Its exact amount, when deposited, was five hundred and fifteen thousand one hundred and sixty-nine dollars.

"The legacy was accompanied by a declaration of its design; and the execution of that design has been assumed, as well by an acceptance of the money, as by several open and formal avowals by our Government. It was to '*found an institution at Washington for the increase and diffusion of knowledge among men;*' to found, not an academy, not a college, not a university, but something less technical and precise, something whose import and circuit should be bolder and more comprehensive; an

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institution not merely for disseminating, spreading, teaching knowledge, but also, and foremost, for creating, originating, increasing it. Where at? In a city whose name recalls the wisest, purest, and noblest spirit of the freest, newest, and broadest land. And among whom? Not a chosen or designated class—not the followers of a particular sage or sect—not the favorites of fortune, nor the lifted of rank; but among MEN—men of every condition, of every school, of every faith, of every nativity. *Men!* It was with a purpose thus elevated and expansive, thus as well distinct as undiscriminating, that James Smithson committed his wealth to the guardianship of the American Republic. Whatever may be the difference of opinion as to the comparative merits of the many modes of practically realizing this purpose, it is quite certain that the good faith and best exertions of our country are solemnly pledged to its fulfillment. We must try it—try it sincerely, indefatigably, trustworthily—try it through all the diversified and promising channels—try it with no narrow exclusiveness of choice or prejudice as to systems, sciences, or arts. The intention of the benefactor was to make his endowment a perennial fountain of wisdom, as well practical as theoretic or imaginative, whose living waters should be unceasingly distributed to advance the intelligence, comfort, and happiness of human beings.

"When, at no distant day, I trust, it shall be seen that within the walls of this building the truths of nature are forced by persevering researches from their hidden recesses, mingled with the stock already hoarded by genius and industry, and thence profusely scattered, by gratuitous lectures or publications, for the benefit of all; when it shall be seen, that here universal science finds food, implements, and a tribune—art her spring to invention, her studio, and her models; and both shall have throngs of disciples from the ranks of our people, emulous for enlightenment or eager to assist—then the condition of our legacy will have been performed, and the wide philanthropy of Smithson have achieved its aim!

"As a beginning to the plan for effecting a result so interesting, Congress have deemed and declared the erection of a large and commodious edifice indispensable. The Board of Regents were, by the legislative charter, instructed to select, as soon as they were organized, a site, and to cause a structure to be reared, and that structure to make 'of sufficient size, and with suitable rooms or halls for the reception and arrangement, upon a liberal scale,' *first*, of objects of natural history, including a geological and mineralogical cabinet; *second*, of a chemical laboratory; *third*, of a library: *fourth*, of a gallery of art; *fifth*, of the necessary lecture-rooms; and, *sixth*, of the national cabinet of curiosities and relics, now poorly and partially accommodated in the upper story of the Patent Office. It is the first duty of the Regents to obey the unequivocal behests of Congress, to carry them out faithfully on the scale and in the spirit they obviously import; and to let their measures flow, not from their own discretion, but from the provisions of the law which they are empowered to execute. I say this in explanation of the dimensions which the building must necessarily take. It is consecrated to the various and boundless objects that tend to 'increase and diffuse knowledge.' It is designed to participate, as a satellite, in the duration and march of our glorious Union, to be the depository of all the rare productions of nature and art which centuries may gather, and to throw open halls sufficiently ample to contain the knowledge-seeking masses of our countrymen. Congress have stamped this character upon it, by prescribing and appropriating its vast interior compartments, and by other positive expressions of their will.

"To conform strictly to instruction, and yet keep within the pecuniary limits assigned to them; to provide the space called for, and yet avoid even the appearance of unnecessary expansion; to combine solidity with architectural beauty, and wholesome ventilation, and to satisfy at once true taste and stern economy by banishing useless embellishment, were aims always controlling and uppermost with the Regents. How far they have succeeded, time will show, and must be left to the candor of public opinion. Not doubting that the experienced and reliable contractors for the work will accomplish their undertaking, in all its details, with exactitude and fidelity, I may venture to give you an anticipation in brief of the building whose first stone is now laid.

"Its exterior will present a specimen of the style of architecture that prevailed some seven centuries ago, chiefly in Germany, Normandy, aud southern Europe, which preceded the Gothic, and continues to recommend itself, for structures like this, to the most enlightened judgment. It is known as the Norman, or, more strictly speaking, the Lombard style. It harmonizes alike with the extent, the grave uses, and the massive strength of the edifice; it exacts a certain variety in the forms of its parts; and it authorizes any additions that convenience may require, no matter how seemingly irregular they may be.

"It will extend, east and west, an entire front of four hundred and twenty-six

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feet, having a central building of fifty by two hundred feet in the clear inside, with two towers; two wings of unequal fronts, the east one forty-five by seventy-five feet in the clear inside, with a vestibule and porch attached to it; the west one thirty-four by sixty-five feet in the clear inside, with a northern semicircular projection. These wings will be connected with the central building by two ranges sixty feet in length in the clear inside. It will have a central rear tower, and other towers of different heights, sizes, and characters, two of them placed in the wings. All these numerous towers are essential to arrangements within, as flues, stairways, ventilators, and detached rooms; and are of different heights, varying from sixty to one hundred and fifty feet.

"The first story of the central building will be occupied by the library, the chief lecture room, and the principal hall; the second story by the museum. The laboratory and chemical lecture room will occupy the east wing; the gallery of art the western wing and western connecting range. The chosen material is a freestone of a lilac-gray color, drawn from a quarry on the banks of the Chesapeake and Ohio canal, near Seneca creek, and twenty-three miles from this spot.

"It is gratifying to me to be able to accompany this imperfect sketch with the statement, that the entire pile is to be finished, and furnished, and fitted up, for a sum less, by thirty-seven thousand dollars, than the one set apart by Congress as applicable to the building alone.

"How best to put this Smithsonian Institution in progress; to give it definite character and views; to shape its line of march as Congress has either ordered or intimated that it should be, and to let the testamentary purpose be apparent in all its operations, was a task on which ability and much consultation have been expended. There were, I may almost say, necessarily, and of course there were on this cardinal point, great diversities of sentiment and construction, as there had been during the masterly debates which prefaced the passage of the law. What constituted '*knowledge*,' in the sense of Smithson's bequest? In what manner shall its '*increase*' be provided for? By what method shall its '*diffusion*' be sought? Should the developments of the laboratory be more engrossing than the stored resources of the library? Will oral expositions or printed treatises be preferable? Are permanent professorships to be systematized, or temporary teachers to be enlisted? In fine, what should be the instruments and the orbit of an establishment whence the light of knowledge was required constantly to radiate among men?

"They to whom was confided the resolution of these problems into practical measures, have felt the weight and delicacy of their mission. They began by profoundly studying the subject in its several aspects. They cherished with ardor, and discussed with freedom, their respective projects. The conflicts of upright minds, however, rarely fail to end in mutual concession and compromise; and thus scarcely a single measure was adopted except by unanimous concurrence. The Regents have submitted their labors and conclusions to the country—the report of their proceedings was duly made for legislative supervision; and may they not confidently hope for (what they know knothing of theirs can succeed without) the co-operation and sympathy of the American people?

"There are some results to be anticipated from the success of the Institution, which, though not as obvious as others, are, nevertheless, such as no sound American heart can wholly disregard, and which it may not be misplaced to glance at. That we shall fulfill, in the presence of watchful civilization, an admitted obligation, and that the common mind of our country, on which the permanency of its liberties so closely depends, will be exalted and invigorated, are considerations abundantly strong to rally us all to the manly effort. No greater shame, and no greater loss can readily be incurred, than would be consequent on ignoble failure. But may it not be justly said, that the mild and genial influence of this establishment will strengthen and tighten the cords of our Union, and give to the capital of that Union a new charm, with greater stability?

"The Smithsonian design is, as I have already suggested, a peculiar one. It cannot, as a scene of educational training, have any pretensions or provoke any jealousies. It is no rival of the many admirable schools which adorn the respective States, and can in no manner intrude upon their spheres of action. Yet it will be a factory and a storehouse of knowledge, accessible to all the agents of this vast confederacy—the executive, legislative, judicial, civil, military, foreign and domestic agents. It will be the recipient, too, of such fruits of the labors, and such acquisitions of the enterprise and travels of these agents, as may contribute to illustrate, and explain, and facilitate the public service, or to give precision and vigor to its operations of every kind. As a resource and a sanctuary for intellect, the Institution can hardly fail to

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become an object of patriotic pride and attachment, and must be felt as a persuasive inducement to preserve inviolate the constitution, with whose fate its own is identified.

"I will not dwell upon its special claim to the fostering kindness and hospitality of the Metropolis. Her citizens doubtless appreciate that justly. By designating Washington for its local habitation, the generous testator has summoned the intelligence, the courtesy, and the philanthropy of her inhabitants, as auxiliaries to his beneficent project. Already it has added to her social scene a fixed star, whose beams pervade the scientific world; and, ere long, this rising temple, consecrated to the highest of human pursuits, KNOWLEDGE, will give fresh attraction and firmness to her destiny.

"Mr. Dallas having concluded, a national salute was fired by the Columbian artillery, while the band played a national air.

"The benediction was then pronounced by the Rev. F. S. Evans, and thus were concluded the ceremonies of the day, which were witnessed by at least six or seven thousand persons."

Thirty-fourth Meeting, May 25, 1847.

Present, Messrs. Seaton and Totten.

Mr. C. Buckingham appeared before the committee, and represented that, in laying the water-pipe from the fire-plug on the Market square to the site of the Smithsonian building, according to his contract, he had incurred (over the amount of $650, as agreed on in that contract) an excess of expenditure which, including the sum of $84 for his personal services, amounted to $138.23; as shown in the following specification of items:

Building Committee of the Smithsonian Institution

MAY 18, 1847. To C. Buckingham.

To lead pipe to conduct water from avenue to the site of building, 8,090 lbs., at 6½ cents	$586 18
107 lbs. of lead pipe, at 7½ cents	9 50
156 lbs. of lead pipe, at 7½ cents	11 70
iron pipe across the canal	42 75
plumber's bill for making joints	86 10
excavation and filling in same	80 00
one hand, ten days, at $1.50	15 00
one laborer, ten days, at $1.00	10 00
two stop-cocks	5 50
boxes in pipe at Canal, and box at end	8 00
a cylinder for cock at Market square	2 50
relaying payment on 9th street and market	2 00
my own services 28 days, at $3	84 00
	788 23
	650 00
	$138 23

The amount of $138.23 Mr. Buckingham asked to be allowed, over and above the amount in the contract agreed to be paid to him.

Mr. Buckingham further alleged, in support of his request, that he had laid down *extra* strong pipe, instead of strong pipe, as by his contract he was alone bound to lay—say about 1,800 lbs. weight of pipe beyond the contract, at 6½ cents, making $117; that when he received this pipe he had called on one of the committee, (Mr. Seaton,) and informed him that he proposed to return it, as his loss in so doing would have been but $50, in the shape of freight; but was dissuaded by Mr. Seaton from so doing.

The committee declined acting upon Mr. Buckingham's application, but informed Mr. B. that they would lay the case before the Board of Regents.

The committee instructed Mr. Seaton to pay over to Mr. Buckingham the amount of his contract, to wit, $650; which was accordingly done.

Mr. Seaton stated to the committee, that on the 22d inst., Mr. Downer, contractor for the erection of the fence enclosing the Smithsonian lot, had represented to him (Mr. S.) that the said fence would cost him much more than the sum of $400, for which he contracted to erect it; and that he (Mr. Downer) offered to relinquish to

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the committee all the work he had already put on the fence; they releasing him from the contract and paying him the cost of the materials purchased.

The committee, after consultation, decided that it was inexpedient either to release Mr. Downer from his contract, or to make him any allowance beyond the sum in that contract specified to be paid for the work. And the superintendent was instructed to inform Mr. Downer what had been the decision of the committee in his case, and in that of Mr. Buckingham.

Mr. Seaton submitted to the board the following letter, which had been forwarded by Mr. Owen from Indiana, with a request that it be spread on the journal of the committee:

OFFICE OF NEW JERSEY R. R. AND TRANS. CO.,
NEW YORK, *April* 8, 1847.

DEAR SIR: I am instructed by the directors of the New Jersey Railroad and Transportation Company to inform you that it is not in their power to give a favorable reply to your application for reduced rates of fare over their road, in favor of Mr. Renwick, as the architect of the Smithsonian Institution. The board, as I mentioned to you, do not feel themselves authorized to act in favor of applications in cases where there may be a diversity of opinions and interests among the stockholders whom they represent.

I am, respectfully, yours, ROBERT SCHUYLER,
Vice-President.

Hon. R. D. OWEN,
New Harmony, Indiana.

And, on motion, the committee adjourned.

Thirty-fifth Meeting, July 28, 1847.

Present, Messrs. Seaton and Totten.

Mr. Seaton submitted from one of the contractors the following letter:

WASHINGTON, *June* 1, 1847.

GENTLEMEN: By an agreement between Mr. Cameron, my present partner, and myself, I have determined (provided it be agreeable to you) to retire from the firm of Dixon & Cameron, as contractors of the Smithsonian Institution. I am anxious to be released from all responsibility provided the Building Committee should deem proper to release me.

Mr. Cameron offers Mr. Horace Butler, of New York, as his security for the completion of the building, should the committee deem the same sufficient.

Yours, very respectfully, JAMES DIXON.

To the BUILDING COMMITTEE OF THE SMITHSONIAN INSTITUTION.

This letter was, without any action upon it, on motion, laid on the table.

Mr. Seaton submitted from Mr. Cameron, one of the contractors, the following letter:

JULY 10, 1847.

GENTLEMEN: In consequence of the withdrawal of Mr. Dixon from the contract for erecting the Smithsonian building under your charge, which leaves me wholly dependent on my own funds to fulfill the contract which we jointly entered into with your honorable body, I would respectfully solicit of the committee the privilege of being paid once a month on my contract, with the architect's certificate, in place of every two months. My expenses for work, and also for materials, and heavy outlay at the Seneca quarries, and payments to my men once every two weeks, absorb my means very fast.

Praying you, gentlemen, to take these things into your consideration, I beg to add that the compliance of the committee with this, my respectful request, will much oblige your obedient and humble servant,

GILBERT CAMERON.

To the BUILDING COMMITTEE OF THE SMITHSONIAN INSTITUTION.

After consultation with the architect, it was—

Ordered, That payments be hereafter made to the contractor monthly, upon the architect's estimate, and with reduction of fifteen per cent. as heretofore.

Mr. Seaton stated to the committee, that on examining the fence around the Smithsonian lot, though executed according to contract, he believed it would be insecure and exposed to frequent injury without a stout top-rail; and he submitted, on this subject, from the architect, the following:

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JULY 22, 1847.

DEAR SIR: Mr. Carr has made an estimate for putting a 8 × 1½ inch top-rail on the fence, with two wrought-iron nails to each paling, and says that it can be done for sixty dollars.

Will you be so kind as to let me know by McPeak whether he shall proceed with it.

Very truly and respectfully yours,

JAMES RENWICK, JR.

W. W. SEATON, Esq.,
Member of Building Committee.

On motion, it was—

Resolved, That the architect be authorized to contract for the addition of a 8 × 1½ inch top-rail, to be firm nailed to the fence at a cost not exceeding sixty dollars.

On motion of Mr. Seaton, it was further—

Resolved, That the architect be authorized to make a contract for whitewashing the fence around the lot, at an expense not exceeding sixty dollars.

Mr. Seaton submitted, on the subject of a resolution heretofore passed by the committee, the following letters, which he received from Mr. Owen:

SUYDENHAM, NEAR PHILADELPHIA, *May* 20, 1847.

MY DEAR SIR: Referring to my former letter, I now enclose you the answer from the Girard College, through their architect, Mr. Walter, which would have been transmitted immediately, but that I was from home when it arrived. I regret its nature and endeavored by personal exertions to render it otherwise, but without success.

The engraving of the college, to which Mr. Walter alludes in no commendatory terms, I will leave with my son, 98 South Fourth street, Philadelphia, (Benjamin Rush,) subject to your order at any moment, should you desire to have it.

On the eve of my departure on the French mission, I cannot lose this occasion of saying with what constant interest I shall continue to follow up the proceedings of the Smithsonian Regents; and of adding, that if it ever be thought I could render the least service to the Institution, while in Paris, it would afford me the greatest pleasure to be called upon.

I beg you to believe in the esteem with which I am, dear sir, very faithfully yours,

RICHARD RUSH.

Hon. ROBERT DALE OWEN.

GIRARD COLLEGE, *May* 8, 1847.

DEAR SIR: I received your favor of the 15th ultimo, enclosing a letter from the Hon. Robert Dale Owen, both of which I laid before the Building Committee of the Girard College; and I am sorry to say, that in consequence of their having no power nor right to expend the funds intrusted to them for any other purpose than the building of the college, they find themselves unable to comply with the request.

They desire me to say that they highly appreciate the flattering notice Mr. Owen has taken of the work under their charge, and their inability to meet his views by furnishing an engraving for the contemplated work.

The only engraving of the college over which they have any control is no doubt entirely too large for the proposed book, and its execution is not such as would do credit either to the Institution or the college.

I send you an impression, by which you will see that it is by no means fit for a work like the one in question.

Very respectfully, your obedient servant,

THOS. U. WALTER.

Hon. RICHARD RUSH.

And, on motion, the committee adjourned.

Thirty-sixth Meeting, October 18, 1847.

Present, Messrs. Seaton and Owen.

Mr. Seaton stated to the committee that he had received several letters from Mr. Notman, of Philadelphia, one of the architects to whom a premium of $250 had been awarded, and who at first had declined to receive said premium in full compensation for his plans; and that Mr. Notman had finally agreed to receive said premium in full, as appears from the annexed check on him (Mr. Seaton) for the amount:

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PHILADELPHIA, *September* 28, 1847.

Hon. W. W. SEATON,
Regent of the Smithsonian Institution.

SIR: At sight pay to my order two hundred and fifty dollars, being in full of premium awarded me as compensation for my design for the Institution, by the Board of Regents; this being my receipt in full for the same, as ordered.

$250. JOHN NOTMAN.

Mr. Seaton further stated to the committee that Mr. Notman requested the return of his drawings, stating that "drawings are invariably returned, except the one preferred."

On motion of Mr. Owen, it was—

Resolved, That the request of Mr. Notman, for the return of his drawings, be referred to the Board of Regents at their next session.

Mr. Seaton submitted from Mr. William Archer, of Washington, the following letter:

WASHINGTON, *August* 27, 1847.

SIR: I address you as a member of the Building Committee of the Smithsonian Institution. It will be remembered the subscriber furnished a plan, specification, and estimate of an edifice for the Institution.

That plan was made to suit what was believed to be the object of the testator, and according to the true meaning of the act of Congress—to "be of the best and most durable materials, and fire-proof." That plan was received by the Building Committee, and taken by them to the eastern cities and shown to the artists, architects, and builders, along with, and in contrast with, the plan of Dr. Owen. And as Dr. Owen was paid for his plan, though not adopted, and as all the other architects that copied from him were paid, surely I have the same if not a better right to be paid than they, as both the committee and the architects had the benefit of my specification and estimate for comparison, or to copy from. Therefore I hope the committee will allow me the same consideration as the others.

I am, with all due respect, your obedient servant,

WILLIAM ARCHER.

To W. W. SEATON, Esq.,
Building Committee Smithsonian Institution.

Mr. Seaton was instructed to inform Mr. Archer, in reply to the above communication, that he is mistaken in supposing that Dr. Owen's plan was paid for; that although the general internal arrangements of that plan were substantially adopted, and though one of the present wings is a copy, somewhat modified, of the original elevation submitted by him, (Dr. O.,) yet that he (Dr. O.) received no remuneration whatever for his plans, they being considered, like Mr. Archer's, a voluntary offering to the Institution; further, that no portion whatever of Mr. Archer's design, either of its general plan or its elevation, had been adopted or copied, with or without modifications; and therefore, even if it be considered as submitted in competition with the other plans, it stands but in the same situation as many others that were returned to the respective architects without any remuneration; and finally, that the committee has no authority to award a premium or grant remuneration in this or any similar case.

The chairman submitted, as a memorandum regarding the condition of the building fund, a copy of a letter yesterday addressed by him to the Chancellor, as follows:

WASHINGTON, *October* 17, 1847.

MY DEAR SIR: I arrived here last evening from Baltimore, and called upon Mr. Seaton this morning. He showed me a letter from you, in reply to a request of his for a power of attorney to draw $7,500 of the funds of the Smithsonian Institution to pay contractors, &c., for which same $7,500 you had previously, to wit: on the 4th instant, signed a requisition; and he requested me to write to you, and comply with your request to be furnished with a copy of such portion of the minutes of our Board as gives authority to draw or apply this sum.

I see you have forgotten how this matter of appropriation stands. Just previously to the appointment of the Building Committee, to wit: on the 28th January last, the Board passed resolutions that the said committee contract for the building at an amount not exceeding $210,000, with 10 per cent. added—say ---------- $231,000
For warming and lighting the same ---------- 5,000
For fitting up and furnishing the same ---------- 20,000
For fencing the lot ---------- 10,000
and some other appropriations.

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After which, the board passed the following resolutions:

"*Resolved*, That the Executive Committee certify to the Chancellor and Secretary of the board the total amount of debts incurred, contracts entered into, and contracts authorized by the board; and that the Chancellor and Secretary, after examination and approval of the same, certify the same to the proper officer of the treasury for payment."

This, you will recollect, was done, and $250,000 of treasury notes obtained.

And they also passed, the same day, the following additional resolution:

"*Resolved*, That the Executive Committee be authorized to receive said payment in Treasury notes, payable to the order of the Chancellor of the Smithsonian Institution in one year from date, bearing an interest of six per cent. per annum; and that they be further authorized to exchange $150,000 of said notes as soon as practicable for an equal amount of six per cent. stock of the United States, payable in twenty years, which stock shall be payable to the Chancellor of the Institution; which said notes and stock shall be deposited for safekeeping only with the Treasurer of the United States, or such other person as they may deem proper, to be drawn out only upon checks or warrants signed by the Chancellor, the Secretary, and the chairman of the Executive Committee."

Now the amount of $7,500, which we now want, and for which you have already signed a requisition, (not the proper form; it should have been "a check or warrant signed by the Chancellor, the Secretary, and the chairman of the Executive Committee,") we desire to draw in the shape of interest, namely: the half-yearly interest due in August last *on the above Treasury notes*, which treasury notes are the result of a requisition already duly made in accordance with the first of the above resolutions for $250,000, and now, as it were, in the hands of a disbursing agent.

It is clearly expedient and proper to draw the interest first, and not to touch the notes themselves till we are compelled to do so; and to obtain this interest a power of attorney from you, it seems, is necessary.

The Chancellor, Secretary, and chairman of the Executive Committee, have the full authority to draw not only the interest, but, in proportion as they may be required, the treasury notes themselves also, without any ulterior appropriation, or other action whatever, of the board.

To make our payments to the contractors, we shall have to draw a portion of the notes themselves, and sell them before New Year's day, the date when our semi-annual interest on the principal sum of $515,169 becomes due.

You may remember that the understanding was, that of the entire sum at which the building might be contracted, not more than one fifth was to be spent by the building committee in each of the five years during which the building will be in progress of construction. Now you will see by the items of expenditure since the 1st of March last, which Mr. Seaton informs me he has sent you, that we have in the present year, so far, paid to the contractor but $14,088. I learn that the probable amount we shall have to pay to him up to the 1st January next, may be about $10,000; and up to the 19th March next, (being one year from the date of the contract.) perhaps $5,000 more; making the total payments in the first year but $29,000, instead of $41,000, (one-fourth the amount at which the building was contracted,) being the amount we were authorized to expend.

We have thus, you will perceive, husbanded our resources so as to save interest much beyond the anticipations of the board.

The building proceeds as well as could be desired; and its appearance, so far as I can learn, gives universal satisfaction.

I am, my dear sir, faithfully yours,

ROBERT DALE OWEN.

The Hon. GEORGE M. DALLAS, *Chancellor*.

The chairman, in connection with the subject of the treatise on Public Architecture, of which the preparation by resolution of the 6th March last (see page 22) was intrusted to him, stated to the committee that he had commenced the collection of materials for said work, but had been able to make but little progress in it while at home, for lack of the necessary works of reference; that it was his intention now to devote his time to it, without interruption, in the hope that he might be able to complete the letter press before the meeting of the board in December, and that some of the chief illustrations were already in hands in New York.

And, on motion, the committee adjourned.

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Thirty-seventh Meeting, October, 22, 1847.

[Held on the site of the Institution.]

Present, Messrs. Seaton, Totten, and Owen.

Representations having been made to the committee by sundry individuals, in regard to the insufficient quality of some of the materials employed by the contractor in the building, they proceeded to the building, and after carefully examining the materials complained of, they decided that, although there were some pieces of timber in the east connecting range which were not merchantable, these were not of such a character, nor so placed, that any practical injury would result to the structure from their use; and, therefore, the committee decided that it was not necessary to condemn or remove them. They instructed the architect, however, for the future to throw out every piece of timber, no matter how unimportant its destination, which was not strictly merchantable.

The committee fully approved all the other materials used in the building.

And, on motion, the committee adjourned.

Thirty-eighth Meeting, October 26, 1847.

Present, Messrs. Seaton and Owen.

The chairman informed the committee that he had visited, in company with the architect and contractor, the several quarries of Bull Run from which material is now getting out for the building, and had inspected the blocks prepared for transportation, of which a large number had accumulated in the quarry in consequence of the injury done to the canal by the freshet several weeks since. He was completely satisfied with the quality and color of all that had been quarried. The stone quarries with remarkable facility, and with such regularity that the face, as it splits, is often smooth, and regular enough to resemble stone roughly dressed for the external face of a building. It resembles in this respect the granite described by Dr. Owen, and is quarried in the same manner.

As to the quantity, it seems, as the quarries open, to be absolutely inexhaustible; the representations of Mr. Dixon, former contractor, to the contrary notwithstanding. The contractor proposes to open another quarry, immediately on the bank of the canal, and some 300 or 400 yards nearer Seneca creek than that which has heretofore furnished material; in which new quarry the face of the rock, so far as it is disclosed, promises even a better quality and color than that in the old; while the transportation from the quarry to the scow will be greatly shortened.

Nothing can be more satisfactory than the aspect of these quarries, the facility with which they are worked, the grain and tint of the material they have furnished, and their promise for the future.

On motion, the committee adjourned.

Thirty-ninth Meeting, November 1, 1847.

Present, Messrs. Seaton, Totten, and Owen.

The chairman submitted the first chapter of the work which, in accordance with a resolution of the committee he is preparing, on Public Architecture.

It was approved.

The chairman, in connection with the preparation of the said work, stated to the committee his intention to visit New York in a few days, as well to examine the illustrations now in progress, and put others in hand, as to consult authorities not to be found in this city.

And, on motion, the committee adjourned.

Fortieth Meeting, November 9, 184

Present, Messrs. Seaton and Owen.

On motion of the chairman, it was—

Resolved, That the architect be requested to cause to be prepared, so as to be ready next summer, the furniture of the Regents' room, as set down in the specifications, to wit: eighteen chairs and a table; and that he cause also to be made, as furniture for the Secretary's room, and to be ready at the same time, a desk, six chairs, and a small centre table.

On motion of Mr. Seaton, it was—

Resolved, That the remuneration of William McPeak, messenger, be, from the date of his last payment, to wit: the second of August last, seven dollars per week.

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On motion of Mr. Seaton, it was—

Resolved, That the chairman order, for the use of the Board, 250 copies of Senate document No. 212, being the first report of the Board of Regents to Congress; provided the cost of the same do not exceed fifteen dollars.

And, on motion, the committee adjourned.

Forty-first Meeting, November 26, 1847.

Present, Messrs. Seaton and Owen.

The chairman, on his return from New York, made the following report:

In regard to the illustrations of the work on Public Architecture, I find that to procure their execution in a manner that shall be creditable to the Institution, will cost more than I had anticipated. Mr. Drayton, who has charge of the publications of the Exploring Expedition, and has, in consequence, great experience, both in regard to the relative talents of engravers and to the proper cost of engravings, has afforded me much assistance in this matter. We found it impossible, however, to contract for the steel engravings, giving two perspective views of the Institution, one from the southeast, and the other from the northwest, and executed in the best style of art, for less than three hundred and fifty to four hundred dollars for the two; which is fifty per cent. more than I expected to pay.

Having satisfied myself, however, that engravings of this character could not be obtained for less, I empowered Messrs. Sherman and Smith, corner of Broadway and Liberty street, to whom Mr. Drayton recommended that they should be intrusted, to proceed with one specimen; after which they would be able to fix the exact price at which the two could be completed.

For the reasons above stated, and considering the very limited amount placed at the disposal of our committee for illustrations, I judge it prudent to trust, for the other illustrations, to wood cuts, which are now executed in New York in very good style, and which will not cost more than half as much as steel engravings.

Accordingly, I called on Mr. Adams, by whom were executed the wood-cuts in Harper's Pictorial Bible, and who has since, as I learn, retired from the profession. I had been advised to consult him as one who knew more about the relative talents of wood-cutters in this country than probably any other man, and he recommended, as the best for architectural engraving, Mr. John H. Hall, Fulton street. I had several interviews with Mr. Hall, obtained his prices, and inspected several specimens of his work, with which I was well pleased, and of which two are herewith submitted to the committee. The effect does not seem to me greatly inferior to that of steel engraving.

Mr. Hall offered to execute the perspective view of the Gothic plan of Mr. James Renwick, ordered by resolution of this committee of April 10, and which requires more work than the perspective view of the Institution, for $100.

It will be necessary to employ more than one wood-cutter, in order to complete the illustrations in reasonable season; and if the committee decide that it is best to procure the illustrations chiefly on wood, I have made the arrangement for putting them in hands. Mr. Roberts, whom I stated in my report of April 6, to have been recommended by Mr. Durand as the best wood-cutter in this country, I found exclusively engaged by one of the tract societies.

In regard to the application made by resolutions of this committee, under date April 19, to the vestry of Grace church, and of Trinity church, and to the firm of Alexander T. Stewart & Co., for plates of Grace church, Trinity church, and Stewart's new marble store, I have to state that the Grace church vestry have liberally agreed to pay one hundred dollars for a plate of their church, on the terms of our resolution. The Trinity vestry have not yet come to a final decision. Mr. Stewart was not seen, though twice called on; but one of his partners informed Mr. Renwick that they would probably furnish an engraving of their building, as it is to be ultimately completed.

By the terms of our resolution, the engraving of Grace church must be executed on steel or copper; and as it is a much less elaborate engraving than that of the Smithsonian building, Mr. Drayton thinks we can have it executed on steel for a hundred dollars.

Even if we decide to let all the other illustrations be cut on wood, it will, I think, be impossible to execute those already embraced in our resolutions, and such as are indispensable to a due explanation of the text to the general reader, for the sum of $1,000, to which the appropriation is at present limited. Nor do I believe that the treatise itself, including the appendix, can be advantageously condensed into a

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hundred and fifty pages of letter-press, as by the agreement with Wiley & Putnam it was stipulated it should. I deemed it proper then to seek to obtain from these publishers a conditional supplement to that agreement, based on the contingency that the Board of Regents might vote an additional appropriation. They agreed to the proposal I made to them, and signed the following supplement to the agreement of April 8, 1847:

Whereas, by an agreement made the third day of April, 1847, between Wiley & Putnam, publishers, of New York, and Robert Dale Owen, on behalf of the Building Committee of the Smithsonian Institution, regarding the publication of a treatise, to be entitled "Hints on Public Architecture," it was stipulated that the illustrations of the said treatise (that is to say, its engravings and wood cuts) should cost not less than one thousand dollars, and that the number of pages of said treatise should not exceed one hundred and fifty pages of letter-press. Now, therefore, it is further agreed, that in case the said Building Committee should see fit to increase the value of the said illustrations, then the said Wiley & Putnam agree that the number of pages of letter-press may be proportionably increased; as, if five hundred dollars additional be expended for the illustrations, then one-half of one hundred and fifty pages—say seventy-five pages—may be added to the letter-press; and so of any larger or smaller sum: *Provided, however*, that the entire number of pages of letter-press shall not, in any case, exceed two hundred and fifty.

Witness our hands and seals this 22d of November, 1847.

WILEY & PUTNAM, [L. S.]

In presence of THOS. B. GRAVES, as to Wiley & Putnam.

ROBERT DALE OWEN,

On behalf of the Building Committee of the Smithsonian Institution.

I recommended that in the report of the Building Committee to be made to the Board at their next meeting, it be proposed that they should increase the appropriation accordingly.

I examined, with a good deal of care, most of the churches that have been recently erected and are now in progress of erection in New York. They are, as a general rule, very creditable to the architectural talent of the country. Among those yet unfinished, one of the most promising is St. George church, (Episcopalian,) situated at the corner of Sixteenth street and Stuyvesant square, built in the same style as our building, namely, in the Lombard style of the twelfth century. The general effect will, I think, be very fine, especially of the front towers. The rear terminates in an apsis, somewhat similar to that on the north front of our west wing—a beautiful feature. The building, when completed, it is said, will cost one hundred and fifty thousand dollars; and though I could not obtain its exact size, it will be one of the largest churches in New York, being some ninety feet in width. Its galleries are to be supported from the side walls without pillars. Some of its details appeared to me faulty, as the corbel course along the upper portion of its side walls and on its towers is feeble, and not sufficiently projecting for a building of such magnitude; and I think the architect would have done better to trust to the flat Norman buttress running into the corbel course above, rather than to introduce a buttress of a much later date, deep and heavy, and which, from many points of view, wholly conceals the windows. The latter (the windows) are both wider and higher than is usual in the Lombard style; but I think the effect is good.

I purchased, and herewith submit, a perspective view of this church, as one of the first proofs that the opinion I expressed when the style of our building was objected to on the score of its singularity, (namely, that a greater objection might hereafter be, that Lombard buildings would be repeated all over the country, as Grecian and Gothic have been, until we were tired of them,) is not unlikely to be verified.

I visited, also, some of the older churches—among the rest St. Paul's, in Broadway, near the Astor House. It exhibits great beauties and great defects. Its spire is, in my opinion, one among the prettiest in its style (the Roman) in the world; and as such, I had it daguerreotyped, and shall use it as an illustration in our work. The interior, with its Grecian pillars and broken entablatures, forming imposts for the arches of its galleries, furnishes a striking illustration of the bad effect produced by that heterogenous mixture of Gothic forms and Grecian details that goes under the name of Roman.

Through the kindness of Professor Renwick, I obtained admittance to the New York Society Library, and spent sometime there examining its works on architecture.

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I also obtained, through Professor Renwick, an opportunity of examining Canina's great work on Egyptian, Grecian, and Roman architecture, published a few years since at Rome. It may be said, in each style of which it treats, almost to exhaust the subject—at least to furnish the best and most extensive modern illustrations of Egyptian, Grecian, and Roman buildings, to be found in any one collection now extant. As almost all the works on architecture heretofore purchased by us have been on Gothic and Norman architecture only, I think this work would be a valuable and important purchase. It is the property of a private gentleman, Mr. Parish, who imported it; and I understand, from Professor Renwick, it could be had from him at first cost in Rome, with duty added. It would be of much use to me in the preparation of the work I have now in charge.

At Philadelphia I saw Mr. Notman, and at New York Mr. Arnot; both of whom expressed a desire that their designs should be published in our work. I think it likely that if we agreed to furnish each of them a hundred copies of the engraving, (which we can obtain at the cost of paper and printing,) they would supply us, at their own cost, with a reduced perspective view from which to engrave; and if the board votes us an additional appropriation, I recommend that such a proposition be made to them; and also to Mr. Daniel, of Cincinnati, who has signified to me a similar desire in regard to the publication of his design—a design, as the committee may remember, in the Italian style.

At Philadelphia I called upon Mr. Joseph R. Ingersoll, who has always shown much interest in the Institution, and he has promised to procure for me, from authentic sources, the exact dimensions of the Girard College building; its cost to the present time; and the estimated cost of its completion. He also stated to me that he would endeavor to procure some particulars regarding the style and dimensions of a large cathedral of which the foundations have recently been laid by the Catholics of Philadelphia.

I made the acquaintance in New York of Mr. Kellogg, the artist who has charge of Mr. Power's "Greek slave." He expressed to me a strong desire that some arrangements might be made by which our Institution should obtain that statue, and fit up one of the rooms in our building (perhaps in one of the central towers) for its reception. It is, in my opinion, one of the finest statues that has ever been produced, in ancient or modern times, and as well worthy of a separate tribune as the Venus de Medicis.

ROBERT DALE OWEN.

WASHINGTON, *November* 26, 1847.

On motion of Mr. Owen, it was—

Resolved, That Professor Renwick be authorized to purchase on behalf of the Institution, of Mr. Parish, Canina's work on Egyptian, Grecian, and Roman architecture, provided the same can be obtained at the first cost in Rome, with the duty added.

Resolved, That the chairs for the Regents' room and Secretary's room be covered with maroon-colored leather.

Report of the Building Committee for the year 1848.

During the past year the Smithsonian building has been advanced in a manner satisfactory to the committee.

An inexhaustible supply of freestone of excellent color and quality is afforded by the quarries; and the deliveries have met with no such interruptions from failures in the canal as were experienced last year, to the great delay of work upon the building.

The east wing of the building, and the adjacent connecting range, are so far completed that the architect promises a state of readiness for occupation early in January. He reports the whole interior of this part to be finished, with the exception of the shelving of the cases—purposely delayed to enable the Secretary of the Institution to adjust it to the apparatus which it is to receive. He reports, also, that the furnaces for supplying warm air to these rooms, and also the ventilating apparatus, will be completed at the same time.

The west wing and its connecting range are completed externally, and the interior of the hall of the gallery of art—intended to be used temporarily as a library—is well advanced. A portion of the book-cases are in progress, and will be placed in this apartment until the library room proper, in the centre building, shall be ready for their reception.

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The foundations of the whole of the main building, including the towers, are laid, and the superstructure carried about five feet high. The campanile and octagonal towers, and two smaller corner towers of the centre, are 80 feet above their foundations.

The architect also represents that the contractor, Mr. Cameron, has cut all the stone for the first story of the main building, and designs, if possible, to have the whole of this part of the structure under roof before the winter of 1849–'50, in order the better to protect the walls.

The committee see no reason to doubt that the whole structure will be completed within the time specified in the contract, namely, by the 19th day of March, 1852.

The total amount expended on the building and on the fencing of the lot, including superintendence, and all incidental expenses connected therewith, up to the 1st of December, 1847, was, as stated at that time	$25,002 67

The amount expended on the building and its appurtenances from the 1st of December, 1847, to the 31st December, 1848, is as follows:

Paid Mr. Cameron, contractor	$50,860 00
Paid Mr. Renwick, architect's salary	1,800 00
Paid Mr. Renwick for travelling expenses	330 94
The expenses of architect's office, including furniture for and incidental expenses of the same, drawing instruments, stationery, and pay of draughtsman	253 69
Paid Mr. Robert Mills, assistant architect and superintendent, for part of the year	892 78
Paid Mr. Brown, superintendent, for three months	187 50
Paid for improvement of grounds	109 88
Total	$53,934 74

The total expenditure on the Smithsonian building from the beginning up to the 31st of December, 1848, may be thus stated:

Paid Mr. Cameron, contractor for the building	$71,700 00
Paid Mr. Renwick, architect, as salary	3,475 48
Paid Mr. Renwick for travelling expenses	629 78
The expenses of architect's office, including furniture for and incidental expense of the same, stationery, drawing instruments, and pay of draughtsman	583 23
Paid Mr. Mills, as assistant architect and superintendent	1,247 84
Paid Mr. Brown, as superintendent, for three months	187 50
For improvement of grounds	743 88
For water-pipes and laying the same	660 00
Making a total to the end of the year 1848, of	$79,227 21

At the last annual meeting (December, 1847,) it was resolved that there should be considered applicable to the building, (including preceding expenditures,) up to the 19th day of March, 1848, the sum of	$42,000 00
And for the year ending March 19, 1849, the further sum of	52,000 00
Total	$94,000 00
But, as shown above, the expenditures to the end of the year 1848, have been	79,227 21
Leaving a balance applicable, of the building fund, between 1st January and 19th March, 1849, of	$14,772 79

Judging from the progress already made, the committee are of opinion that the contractor will be able to finish the building, and all other matters comprised in his contract, for the stipulated amount; and that all expenditures connected with the building, including the laying out of the grounds, planting, sodding, fencing, road-making, heating, ventilating, &c., may be comprised within the limit of $250,000, set by resolution of the board at the last meeting.

During the past year the committee have entered into a contract, amounting to

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$1,050, with Mr. John Douglass, of Washington, for enclosing the grounds of the Institution with a hedge, and for planting trees and shrubbery. The architect having marked out the paths and roads, and indicated the positions of the trees and shrubs, these, comprising about 160 species, principally American, have already, for the greater part, been planted, as well as the surrounding hedges, which are to consist of pyrocanthus, Osage orange, Cherokee rose, and hawthorn, respectively, on the four sides of the lot. Investigations and inquiries that have been made on this subject, satisfy the committee that this climate in favorable to the growth and maintenance of hedges, and that for a moderate expense a permanent and beautiful enclosure will be secured. The architect has been requested to prepare drawings and estimates of the gateways necessary to connect the building with the adjacent streets.

Proposals have been obtained for putting up furnaces in the east wing; also, for sodding a portion of the ground immediately around the building, and for making permanent roads and paths from the streets to the building and through the grounds; but it is not contemplated to engage in these last-mentioned works at present.

In relation to the work entitled "Hints of Public Architecture," prepared by the late Chairman of the Building Committee, for publication by that committee under resolution of the Board, it is to be stated that the manuscript has been submitted, under vote of the committee, to the inspection of Judge J. K. Kane, of Philadelphia, Governor Kemble, Esq., of New York, and President Everett, of Cambridge University. From all of whom letters communicating their opinions of the work have been received, and are submitted with this report.

Mr. Owen, in a late letter to one of the committee, states his intention to be in New York by the 20th December, to superintend the printing; the printer refusing without his supervision and arrangement of the illustrations, &c., to put it to press, and expresses his confident belief that it will issue by the 10th of February—certainly, before the adjournment of Congress.

The architect of the Institution, who has drawn many of the illustrations, and superintends the engraving gratuitously, states that all the engravings are ready, or nearly so, and that the illustrations will amount to upwards of 100, of which six will be lithographs and the remainder wood-cuts by the best engravers in the country.

The wood-cuts generally do great credit to the engravers; a few of the principal ones have been brought on by the architect, and are herewith laid before the board.

The expenses of the engravings contracted for will be $2,000, of which $——— has been paid up to 1st December, 1848, the remainder being due the engravers.

The vestry of Grace Church, in the city of New York, have presented to the committee a lithograph of that building, which will cost the vestry $100. The draughtsman, Mr. Wade, Messrs. Bobbett & Edmonds, engravers, and Mr. Putnam, the publisher, have presented a beautiful illustrated title page which was designed by the architect of the building.

As it may be satisfactory to the Board to learn as much as can now be communicated in relation to such expenditures—not embraced in the contract with Mr. Cameron—as have been, or will be, necessary upon the building and grounds; and which must fall within the building fund of $250,000—the committee proceed to add the following statement:

Amount of Mr. Cameron's contract		$205,250
Remainder applicable to other objects connected with the building or grounds than those provided for in said contract		44,750
		$250,000
Amount applicable as above		44,750
Portions of the expenditures now referred to, are either fixed and definite in their nature, or have been already settled by resolution; they are as follows:		
Architect's salary for five years	9,000	
Superintendent's salary for five years	5,000	
Incidental expenses allowed to architect	2,000	
Facing area wall with cut stone, extra work, allowed by resolution	480	
Adding battlements to cloisters of east wing, extra work, allowed by resolution	200	
Additional cases for apparatus, ordered by Secretary	200	
Contract for hedging, with Mr. Douglass	250	
Contract for planting trees and shrubs, with the same person	800	

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Furnaces for warm air, registers, &c., already contracted for—say	$600	
		$18,580
Which amount of $18,580, deducted from the above sum of $44,750 leaves, applicable to other objects of the same nature, the sum of		26,220
Two or three other small expenditures may be set down as admitting specific and close estimate, viz:		
Two chimneys to east wing, being extra work already done, and which, in the opinion of the architect, should be allowed	400	
Sodding ground near building, estimated at	100	
Deducting this total, viz		500
There still remains the sum of		$25,720

Some of the matters to which attention is addressed as having claims upon this sum, are: the addition of other battlements to cloisters; of a clerestory to the museum; the substitution of flights of iron for wooden steps in the towers; other hot-air furnaces; registers for ventilation; gateways into the grounds; additional trees and shrubs; making roads and paths, &c., &c., &c. These objects, some indispensable, others more or less urgent, all conducive to utility, permanence, beauty, or convenience, will be decided on by the committee under the authority with which they consider themselves intrusted, and as occasion shall arise, only after mature deliberation on careful estimates in detail, and in a spirit of strict economy. The committee, above all things, intend to keep an earnest regard upon the pecuniary limits set to their operations, and to allow no transgression thereof, either by actual expenditure, or by engagements, or pledges.

A few words remain to be added in explanation of the extra work and alterations of plan alluded to in the preceding statements: as to which it is due to the architect to premise that these have not been caused by any omissions in the specifications of the contract. One item is for *facing the areas with cut-stone*—the contract having provided a facing of good blue Potomac gneiss. The change was adopted because it was thought that a stone facing of the same material as the face of the superstructure would be more harmonious with, and conducive to, the general effect of the exterior of the structure.

2. *Battlements of cloisters.*—After the cloisters of the east wing were completed, it became evident to the architect that from the comparatively low situation of the building, the roofs were too conspicuous, and should be concealed by an appropriate battlement. He therefore advised, and the committee sanctioned, the expenditure of $200 for the battlements of the eastern cloister. The committee has yet to act upon a like suggestion as to the western range.

3. *Two extra chimneys in the east wing* were added by the Building Committee after the plans were made, but before the contracts were signed. Mr. Cameron states that he was not aware of this addition, as it was made after he had completed his estimate; and the architect is therefore of opinion that his claim of extra compensation is just and equitable.

JOS. G. TOTTEN.
W. W. SEATON.
HENRY W. HILLIARD.

WASHINGTON, *December* 31, 1848.

Report of the Building Committee for the year 1849.

WASHINGTON, *January* 2, 1850.

The Building Committee have the honor to report as follows:

In the great desire of the contractor to get the whole Smithsonian building under roof before winter, the progress thereon during the year just elapsed has been rapid—that object having been fully attained before the occurrence of severe weather. The Building Committee deemed this result so important for the protection of a large amount of masonry and wood work, that they participated in this desire of the contractor; and did not hesitate to permit an expenditure on the building somewhat larger than the year would have been entitled to under the project of extending the process of construction through a period of five years. It must not, however, be

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supposed that the expenditures have exceeded the portion of the building fund liable to expenditure under existing resolutions. The portion of this fund thus liable up to the 19th of March next, reckoning from the beginning, is $146,000; the aggregate expenditure on building and grounds now falls short of that sum $10,678.83—which last sum must therefore be the limit of expenditure in the interim—that is to say, from the 1st of January to the 19th March, 1850.

Should the Board of Regents leave the project of a five-years course of construction undisturbed, it will be necessary to lessen, for the next two years, the rate of expenditure on the building. On the other hand, should circumstances lead the board to desire an earlier completion than has heretofore been contemplated, the advanced state of the bnilding resulting from the labors of the past year will be in lucky accordance with such change of policy.

Besides carrying up the walls of the main cell of the building, and finishing its roof, the central front towers and the four corner towers of the main building are carried up as high as the walls of the main building—the central rear tower being 80 feet high.

The architect reports that the stones for the unfinished portions of the building are nearly all quarried; and that the stone-cutting for the campanile south, and two north towers, is nearly completed.

The east and west wings, and ranges, are finished, except some few matters of detail, and are ready for occupation. The workmen are now fitting the west wing with book-cases, for a temporary library; and the west connecting range, for uses connected with the library.

During the past year, with the concurrence of the Secretary of the Institution, and under the advice of the architect, the committee have caused the following alterations to be made in the interior arrangement of the building:

The original lecture-room, in the east wing, proving to be entirely too small, the adjoining apparatus and laboratory rooms were removed, and the whole wing formed into one large lecture-room, provided with seats for one thousand persons. By this arrangement, the apparatus rooms in the east connecting range are in close proximity with the lecturers' table; with which, also, direct and easy communication will be had from the large apparatus museum mentioned in the sequel.

This lecture-room, thus enlarged, being capable of containing as many persons as the lecture-room which was originally designed to occupy about half the lower story of the main building, the latter has been dispensed with, and the space thus obtained divided—giving a room of 65 $\times$ 50 feet as a depository of physical apparatus, and throwing the remaining space into the library.

Besides a manifest gain of useful room by this alteration, it tends to security against fire—since the lecture-room, and the researches and experiments connected with it, will be in a separate wing, easily cut off from all the other parts of the structure, by fire-proof doors of iron.

Another change of internal arrangement is as follows: The two stairways, that in the original plan were carried up between the middle north front towers and the main building, have been dispensed with, and the space they occupied added to the library; as also the central hall; and, as before said, a portion of the former lecture-room. By these several alterations, the library has been nearly doubled in area, and a spacious museum obtained for physical apparatus. The central staircase of the north front will now be carried up within one of the front towers.

The changes above mentioned in the interior of the building will be accomplished, on agreement with the contractor, at an extra cost of $100.

It must be considered, however, that the large addition to the library room will require a large addition to the library equipment and furniture. But as it must be many years before the contents of the library can spread beyond its limits, as first planned, and provided for in the contract, the committee would consider it unwise now to incur any portion of this considerable expense.

A clerestory to the long upper room, or museum, of the centre building, has been adopted by the committee. The architect states that this was originally contemplated by him, and was explained at the time the contract was made. The committee understand that the adoption of the recommendation was left to further consideration. They were satisfied, however, that it was a necessary modification; the great length of this room—nearly 200 feet—being out of all proportion to the low pitch of 27 feet, originally contracted for. The additional amount for which Mr. Cameron, the contractor, engages to carry out this improvement, is $2,850.

No other alterations have been made in the building, and the committee think no others will be needed: none, at least, that will involve much expense.

The arrangement of the west wing and range for a temporary library and reading-

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room, has entailed an expense of $372, which should properly, perhaps, be cha to the library fund. It has, however, been comprised in the following statemen expenditures:

The total amount expended on the building, and on the fencing of the lot, including superintendence and all incidental expenses connected therewith, up to 1st December, 1847, was, as then stated			$25,00
The amount expended on the building and its appurtenances, from the 1st of December, 1847, to the 31st of December, 1848, was, as stated in the last annual report			53,93
Total expended on the building, &c., up to the 31st December, 1848			78,937
The expenditures on the building and its appurtenances during the year 1849 have been as follows:			
Paid Mr. Cameron, contractor for the building		$50,300 00	
Paid Mr. Renwick, architect, as salary		1,800 00	
Paid Mr. Renwick for traveling expenses		266 15	
Paid Mr. Renwick for expenses of architect's office, including incidental expenses of the same, stationery, pay of draughtsman, &c.		268 25	
Paid Mr. Brown, as superintendent, one year's salary		750 00	
Paid Messrs. Culver & Co. for three furnaces		786 11	
Paid Mr. Barrows for one furnace		849 52	
Paid Mr. Cassiday for three scrapers		8 75	
Paid Mr. Beckert for recoloring east wing		50 00	
Paid Mr. Buckingham for plumbing		12 00	
For additional furniture of library	$60 47		
" " "	50 75		
" " "	25 00		
" " "	176 25		
" " "	319 62		
Paid also for temporary library furniture	372 00		
		1,004 09	
Paid Mr. Cameron for extra work on building	21 50		
" " "	31 62		
		53 12	
Paid Mr. Cameron for coal		89 72	
For improvement of grounds—			
Mr. Douglass for trees, &c.	520 00		
Mr. S. Bryan for plank road	62 00		
Mr. Cameron for road making	$45 43		
" " "	56 12		
	101 55		
		688 55	
Paid for hack-hire for Building Committee		17 50	
		$56,883 76	$78,937
Amount expended on the building and its appurtenances up to the 31st December, 1848			$78,937
Amount expended on the same during the year 1849			56,883
Total amount expended on the same up to the end of the year 1849			135,821
At the annual meeting in December, 1847, it was resolved that there should be considered applicable to the building and grounds (including preceding expenditures) up to the 19th day of March, 1848, the sum of		$42,000 00	
And for the year ending March 19, 1849, the further sum of		52,000 00	
And for the year ending March 19, 1850, the further sum of		52,000 00	
			$146,000
But, as shown above, the total expenditures to the end of 1849 has been			135,821
Leaving, of the building fund, a balance applicable between the 1st of January and 19th of March, 1850, of			10,678

The furnaces that have been set up in the building for heating the rooms have n

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proved satisfactory to the architect, nor to the persons who have occupied some of the rooms. He reports that they do not diffuse the heat equally throughout the rooms—that while some apartments are highly heated, others cannot be made comfortably warm; owing, as he thinks, to the difficulty in conveying the heated air horizontally. He also objects to the number of fires which are necessary in the use of furnaces, and has advised that the other portions of the building should be warmed with steam. The committee have requested the architect to obtain full and definite information of all circumstances involved in the use of steam as suggested by him, and to furnish a report such as will enable a judgment to be formed of its adaptation to our purposes, and of its relative cost. The Secretary of the Institution is also engaged in some inquiries of the same nature.

The work entitled "Hints on Public Architecture," authorized to be published by the Building Committee, has been issued, and is submitted to the inspection of the Regents.

The amount expended being somewhat beyond the amount appropriated by the Board of Regents, the committee requested an explanation from the Hon. R. D. Owen, who had superintended the publication of the work. That gentleman states that the landscapes of the lithographs at first executed were so badly done as to be unfit for the press; and that though the lithographer who engraved the building was the only one who would undertake the architectural portion, he did not prove sufficiently experienced in landscape drawing, to render that part of the plates either artistical or effective—this portion was, therefore, redrawn by another lithographer, at an additional expense of $80: that the remainder of the additional expense was incurred by the necessity of altering the size and form of many of the wood-cuts, in order to enable them to come properly into the letter-press; that this was an unforeseen expense, and could not have been ascertained before the work was about being set up in the printing office: that he was compelled to make the alterations in the cuts, or to destroy the beauty of the pages of the book. These additions to the cost of the work having materially enhanced its beauty, the committee hope the Board of Regents will sanction the course of the committee in paying the extra charges.

The committee now present a statement of the expenditures as yet incurred, or pledged on the building and grounds, and chargeable to the building fund of $250,000, heretofore set apart.

Total amount appropriated for building and grounds		$250,000
Amount of Mr. Cameron's contract	$205,250 00	
Architect's salary for five years	9,000 00	
Superintendents and draughtsmen for five years	5,000 00	
Incidental expenses allowed architect	2,000 00	
Facing areas with cut stone	480 00	
Building battlements to cloisters	200 00	
Additional apparatus cases	200 00	
Hedging and planting	1,050 00	
Furnaces already put up	1,185 68	
Addition of clerestory to museum	2,350 00	
Alteration of stairway, &c.	100 00	
Chimneys added to the east wing	400 00	
Sodding ground near building	100 00	
Heating central building with steam, including cellar for boiler and as a coal vault—approximate estimate of the architect	8,200 00	
Additional furniture and incidental expenses—say	1,000 00	
		231,465 68
Leaving, as applicable to unforeseen expenses connected with the building or grounds, the sum of		$18,544 87

A contract made with Mr. John Douglass, jr., for planting and cultivating trees and shrubs within the Smithsonian grounds, and another with the same person for planting and cultivating hedges along the margin of the same, not having been complied with on his part, have been annulled by the committee. The committee are sorry to say, that from these failures the year just past may be considered as almost wholly lost, as respects the establishment of trees or hedges. They look, however, for better results from their future arrangements of this nature.

JOS. G. TOTTEN.
W. W. SEATON.
H. W. HILLIARD.

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Report of the Building Committee for the year 1850.

The Building Committee, in compliance with their appropriate duty, present the following report of the operations, expenditures, and progress on the building during the year 1850:

At the last session of the Board, resolutions were adopted, directing a survey of the whole building, and a report on the manner and faithfulness in which the building contract had been executed, and the best plan for finishing the remainder of the building.

It was found by this examination, that the exterior of the building had been well constructed, but that, in order to reduce the cost, a plan had been adopted and materials employed for the interior, not proper for a building destined to contain property too valuable to be exposed to even a remote danger of fire, and which, especially, so far as it shall consist of donations, will involve the implied condition that it shall be safely preserved.

In accordance with this result, a resolution was adopted, directing the interior of the centre building to be constructed in fire-proof, and that the time of finishing it be extended until the accumulating interest would be sufficient to meet the additional expense.

According to the decision of the architect, who, by the terms of the original contract, is the umpire between the Regents and the contractor, the latter is entitled to the sum of $185,154 for completing the whole exterior of the building and the interior of the wings, ranges, and towers. When this much is finished, the present contract will terminate; though the same contractor has agreed, should the Regents choose to accept his proposition, to finish the remainder of the interior in fire-proof, on the terms mentioned in the annexed report of the architect.

Agreeably to the estimates of Mr. Renwick, and the proposition of Mr. Cameron for fire-proofing, the whole cost of the building when finished, will be $284,000; but as the preliminary expenditure for premiums to architects and other incidental charges connected with the work are not included in this estimate, the committee think it will be safer to state the whole cost at, say in round numbers, $300,000.

Since the commencement of the building there has been expended on the grounds $3,747.51. The committee, however, are pleased to be able to inform the Board, that but little more expenditure on this account will probably be necessary beyond that which is requisite for the preservation of the trees and shrubs already planted.

An appropriation has been made by Congress for the general improvement of the public grounds, or, as they are commonly called, the *Mall*. Mr. Downing, the well-known writer on Rural Architecture, at the request of the President, is now preparing a plan for converting the whole Mall, including the Smithsonian grounds, into an extended landscape garden, to be traversed in different directions by gravelled walks and carriage drives, and planted with specimens properly labelled, of all the varieties of trees and shrubs which will flourish in this climate.

In the opinion of the committee, the adoption of a general plan for the improvement of the public grounds is an object of much importance. A small appropriation annually expended with reference to a well digested plan, would do more in a few years to produce lasting effects, than many times the same sum, expended in accordance with the peculiar fancy of each succeeding superintendent.

If the plan before mentioned be adopted, (and the committee hope that it will be,) the Smithsonian lot will form a part of an extended park, of which the Smithsonian building, by its site and picturesque style of architecture, will form a prominent and most attractive feature.

For the accommodation of those who attend the lectures, plank walks have been put down from the doors of the building to the east and west extremities of the Smithsonian grounds. Much difficulty is still found, however, in getting access to the building during muddy walking; but in the opinion of the committee, it belongs to the corporation of the city of Washington, or other authority, to construct, and keep in good condition, the approaches to the building which are beyond the Smithsonian possessions.

A foot bridge across the canal at Tenth street, would greatly increase the facility of access to those who reside in the central portion of the city. The construction of such a bridge has been proposed to the city council, and your committee hope that the objects and operations of this Institution will commend the proposition to their favorable consideration.

For a minute statement of the progress made in the building, and other details

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connected with the subjects noticed in the foregoing remarks, the committee refer to the report of the architect hereto appended. Respectfully submitted.

(Signed) JEFFERSON DAVIS.
HENRY W. HILLIARD.
WALTER LENOX.

WASHINGTON, *January* 7, 1851.

To the Honorable the Building Committee of the Smithsonian Institution:

GENTLEMEN: By a resolution of the Honorable the Board of Regents, passed July 8, 1850, it was determined to change the plan originally adopted for the finish of the interior of the central building, which consisted of wooden columns and girders, and to substitute in its place a plan of fire-proofing.

In accordance with the above resolution, the undersigned prepared and submitted to the honorable the committee, charged with the examination of the building, four different plans for fire-proofing, and the one preferred by him was adopted.

This plan may be described as follows: The foundation will consist of a series of stone piers, connected by a system of inverted arches of brick, resting on base courses of long stone and laid in cement-mortar; the inverted arches are arranged in such manner as to insure an equal pressure in all parts of the foundation, and thus to counteract, as far as possible, any unequal settlement of the earth upon which the building rests. The first story of the building, containing the library, &c., will be constructed with piers and groined arches of brick, laid in cement-mortar; and the second story containing the museum, will be finished with cast-iron columns and girders and a groined ceiling furred with wrought-iron. The whole interior will be plastered on the above-described brick and iron work, in the same manner as was specified in the original contract, so as to complete the building in harmony with the original design.

Though this change, in construction, will add to the expense of the building, it is believed that the additional cost will be repaid by the permanence of the fire-proofing, and the perfect security it will afford to the valuable collections which may hereafter be placed in this portion of the building.

The above determination of the honorable the Board of Regents, also rendered it necessary that only such portions of the work embraced in the original contract for the building as would harmonize and become an integral part of the fire-proofing, should be constructed by the present contractor and that the expense of the portions not necessary to effect this change should be deducted from the original contract price.

It therefore became necessary to determine accurately the exact amount to be paid to the contractor under the above alteration in plan, and the undersigned, by the direction of the honorable the Building Committee, made a *pro rata* estimate of all the work embraced in the original contract, which estimate was based upon the original contract price.

From this estimate an exact decision was then made of the amount to be paid to the present contractor for the work, which he would be required to finish in conformity with the plan of fire-proofing, which was found to be $185,154. The following is an estimate of the cost of completing the whole building and its accessories, on the amended plan:

Amount to be paid G. Cameron, for completing portions of building embraced in original contract, and necessary in amended plan	$185,154 00
Expense of fire-proofing central building, estimated at	44,000 00
Plastering central building	8,000 00
Galleries to Library and Museum	2,000 00
Stairways to " "	425 00
Furniture to " "	4,700 00
Extra cartage	200 00
Materials	1,000 00
Heating Central Building	8,500 00
Furnaces already put up	1,185 68
Architect, superintendent and incidental expenses of office	16,500 00
Grounds	4,000 00
Additional furniture	4,000 00
	274,614 68
Add for contingencies	9,385 37
Making the total amount of	$284,000 00

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It is the belief of the undersigned, that the above amount of $284,000 will, wi
proper economy, be sufficient to defray the expense of completing the building, a
that when thus finished, it will, for cheapness and durability, be unsurpassed by a
building with which I am acquainted.

By a resolution, passed at the same time as the one directing the above alterati
in plan, the honorable the Board of Regents also decided at the suggestion of t
Hon. Jefferson Davis, "that the exterior of the building, and the interior of t
towers be completed in accordance with the plan, and within the time specified
the contract."

To carry out this decision, the operations on the building, during the last ye
have principally been directed to the completion of the exterior of the building a
towers.

It was the hope of the undersigned, that the towers would have been finished a
roofed in before the winter.

This expectation, has, however, not been realized, owing to the delay occasion
by the repairs in the Chesapeake and Ohio canal, which was not navigable for
period of nearly four months.

The contractor was therefore unable to convey his stone from the quarry, and ve
little work was done on the building during the months most favorable for workin

The present condition of the building is as follows: The eastern and weste
wings are completed with the exception of some small items which will be left u
finished until a few weeks before the completion of the present contract.

The central is roofed in and slated, and enclosed in such manner as to be perfect
protected from the weather.

The principal front tower is carried up to a height of one hundred and twenty-tw
feet, and covered in temporarily for the winter.

The stone and mason work of the lower central front tower is completed, and th
roof is on and slated.

The campanile and northeast corner towers are roofed in.

The central south tower is carried up to a height of forty feet.

The southeast and southwest corner towers are carried up to the height of th
cornice of the cell of the main building.

The contractor states, that all the stones necessary for the completion of the build
ing are quarried. The greater portion of them are delivered at the building, an
will be cut during the present winter.

During the last year portions of the roads around the building have been grade
and many trees and shrubs have been set out on the grounds.

It is a source of satisfaction to the undersigned that the walls of the building hav
not as yet, shown any signs of settlement. When the various heights of the wa
and towers, ranging from twenty-six to one hundred and twenty-two feet are con
sidered, this circumstance affords a satisfactory proof that the principles adopted i
the construction of the building are correct, and that the care taken in calculatin
the weights and pressure of the different walls has not been uselessly expended, an
that the construction of these most important parts of the building has been wel
performed.

The following is a statement of the amount expended in the building up to th
31st of December, 1850:

Amount expended on building up to December 1, 1847, was, as then stated		$25,002 6
Amount expended from December 1, 1847, to December 31, 1848		53,934 7
Amount expended from December 31, 1848, to December 31, 1849		56,333 7
The amount expended on the building during the year 1850, has been as follows:		
Paid G. Cameron, contractor	$24,000 00	
Paid architect, superintendent, and incidental expenses of office	2,459 42	
Miscellaneous	1,868 05	
Grounds, improvement of	1,616 46	
		29,943 9
Making total amount expended on building up to December 31, 1849,		$165,265 1

I remain, very respectfully, your obedient servant,

JAMES RENWICK, JR.,
Architect Smithsonian Institution.

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Report of the Building Committee for the year 1851.

The Building Committee of the Smithsonian Institution beg leave to submit the following report of the progress of the building during the year 1851, and of the expenditures which have been made under their direction during the same time:

By the resolution of the Board, at their session in 1847, the whole expenditure of the building, grounds and furniture, was limited to $250,000; and for the purpose of meeting this expense, without encroaching too much on the accruing and accrued interest, the building was not to be finished under five years from the time of its commencement.

On account of the giving way of a part of the interior, the Regents, at their meeting in 1849, ordered a survey of the whole work by a commission of architects. This commission reported that the exterior of the building was well constructed of good materials; that the interior, consisting of wood and plaster, was not proper for a depository of valuable property, much of which will be donations, presented with the implied condition that it would be properly secured against danger from fire.

In accordance with this report, the Regents found it necessary to deviate from their original intention, and to order the removal of the wood work which had been erected in the interior of the main building, and to direct that its place should be supplied by fire-proof materials.

This change in the materials of construction, according to the estimate of the architect, James Renwick, jr., will require an additional outlay of about $44,000. In round numbers we may therefore estimate the entire cost of the building and furniture at $300,000. To meet the additional expense, the Regents have directed an extension of the time of completing the building.

The contract of Mr. Cameron includes the finishing the whole of the exterior of the edifice, of the interior of the two wings, of the two connecting ranges, and of all the towers. This contract must be finished before the 19th of March of the present year; or, in other words, within the period of five years from the date of the contract.

During the past year, all the exterior of the building, including all the towers, has been completed, and the public have now an opportunity of judging of the architectural effect, relative to which much discrepancy of opinion has existed. The majority of strangers who visit the city consider it a very beautiful edifice, of which the effect will be heightened by the improvement of the grounds and the planting of the trees.

The committee, since the last meeting of the Board, have thought it advisable to order some changes and additions for the better security and use of the building. They have directed that the spiral stairs leading from the bottom to the top of the octagonal tower, shall be constructed in iron, and that the groined arch, which forms the ceiling of the space between the front towers over the main entrance, shall be constructed in brick instead of wood and plaster; also, that the floor of the second story of the vestibule of the southern tower shall be laid with tile instead of wood. Besides these changes, intended to render the building more secure from fire, the committee have authorized the fitting up of three rooms in the basement of the west connecting range, for printing and stereotyping uses.

In view of appropriating a portion of the main building to the purposes of a large lecture room, the committee have directed that the large doors of the main entrance shall be made to open outward, in order to avoid the fatal consequences sometimes occasioned by the rushing out in a panic of a large crowd of individuals.

To facilitate the approach to the Institution from Pennsylvania avenue, the corporation of the city have appropriated $2,500 to the construction of an iron foot bridge across the canal at Tenth street, and the necessary footways. This bridge but for an accident would have been finished before this time and will probably be completed in the course of a few weeks. To connect this bridge with the centre of the Smithsonian building, Mr. Downing has constructed a gravel walk underlaid with coarse stone to serve as a drain. Across the bridge and along this path a series of iron pipes have been laid for conveying gas to the Smithsonian Institution from the main pipe along Pennsylvania avenue.

The plan of the improvement of the public grounds mentioned in the last report of the committee has been adopted by the President, and is now in the process of rapid execution under the direction of Mr. Downing. When it is completed, the whole of the area known as the Mall, extending from the foot of Capitol hill to the Potomac river, will be converted into a beautiful park, adorned with evergreen and other ornamental trees, and traversed with carriage drives and gravel walks. In the midst of this variegated landscape the Smithsonian building will occupy a prominent position, and with its picturesque architecture will produce a harmonious effect.

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The President of the United States in 1847 appropriated to the use of the Institution nineteen acres of land, in the middle of which the building has been erected. This space was enclosed with a fence and planted with trees at the expense of the Smithsonian fund. The whole amount of expenditure for these objects was about four thousand dollars, but the execution of the plan before mentioned, at the expense of the general government, will render unnecessary any farther disbursements on this account.

Without surrendering the right of use of the ground appropriated to the Institution, the partition fence between it and the other part of the Mall has been removed and the whole given in charge to Mr. Downing, and his able assistant, Mr. Breckenridge.

The committee recommend that the interior of the north and south towers, which connect with the rooms hereafter to be used for the library and museum, shall be made as far as possible fire-proof. It is also suggested that the gas and water-pipes be laid in the building as it progresses.

The attention of the Board is invited to the consideration of such measures as may be deemed preparatory to proceeding with the completion of the centre building, such as plans and estimates.

The following is submitted as an account of the expenditures of the Smithsonian Institution relative to the building during the year 1851.

Pay on contracts	$22,000 00
Pay of architect, &c.	2,214 45
Expenses of Building Committee, &c.	43 53
Miscellaneous to building	62 07
Furniture, &c., to building	1,135 95
Grounds	515 54
	$25,971 54

Respectfully submitted:

WALTER LENOX,
GRAHAM N. FITCH,

Report of the Building Committee for the year 1852.

The Building Committee of the Smithsonian Institution presents the following report of its operations during the past year:

The contract between the Board of Regents and Gilbert Cameron has been declared completed by Mr. Renwick. It includes the finishing of the exterior of the entire building, the interior of the extreme wings and connecting ranges, and the interior of the towers, leaving the whole interior of the main building to be finished. This comprises a space of two hundred feet long by fifty wide, and about sixty high, to be divided into a basement and two stories.

Mr. Renwick has presented to the Board his final decision as to the state of accounts between the Regents and the contractor. According to this, there is due to the latter the sum of $11,607.24.

By a resolution of the Board, all the wood work and framing which now occupies the interior of the main building is to be removed, and its place supplied by fire-proof materials. In accordance with the direction of the Regents, the committee have procured plans and estimates of the proposed work, which are herewith submitted for the consideration of the Regents. These plans differ in some respects from the original design of the main building, and the changes are such as materially to improve the edifice, rendering it more stable and better adapted to the purposes of the Institution. Should the plans presented be adopted, the committee would advise that the new work be commenced as soon as the preliminary arrangements can be made, and prosecuted as rapidly as the funds will allow. The experience of last year has shown that, beyond a certain degree, the extension of the time of completing the building does not tend to improve the condition of the funds. The cost of superintendence is in proportion to the time, and not to the work done; and a more advantageous arrangement can be made for finishing the remainder of the building at once than by doing it in detached portions, unless the whole work be stopped for some years. The present condition of the building would scarcely warrant this measure.

Mr. Renwick, in a letter to the Regents, signified his intention of declining further services to the Institution unless his account for full salary was paid by a specified time. The Board of Regents, considering themselves unauthorized to continue his large salary for an indefinite length of time after the end of the five years, which

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limited the duration of the original contract, passed a resolution that his claim should be paid, provided he would report as to the state of the account between the Board and the contractor previous to the discontinuance of his services. Mr. Renwick agreed to this proposition, and in accordance with it has presented his final report to the Regents.

After Mr. Renwick left the charge of the building the committee employed Captain B. S. Alexander, of the United States Corps of Engineers, to prepare detailed drawings and plans for rendering the remainder of the building entirely fire-proof. This gentleman is now engaged as superintendent in the erection of the military and naval asylum for the District of Columbia, and is highly recommended to the committee by the officers of the army and navy, as well as by the fact that so important a work has been intrusted to his superintendence.

Should the plans which are herewith submitted to the Board be adopted, the committee would recommend that Captain Alexander be appointed, with the consent of the superior of his corps, to superintend the completion of the building. As he is an officer of the army, on duty in this city, he will be enabled to give daily attention to the work at a comparatively small expense.

GRAHAM N. FITCH,
RICHARD RUSH,
JOHN W. MAURY,
JOSEPH HENRY,
} *Building Committee.*

Report of the Building Committee for the year 1853.

The Building Committee of the Smithsonian Institution beg leave to present to the Board of Regents the following report of their operations and expenditures during the year 1853:

It will be recollected by the Regents that the first plan of the Smithsonian building contemplated finishing the interior with wood and plaster, and that the Board subsequently adopted a resolution directing the wood-work to be removed and its place to be supplied with fire-proof materials.

In accordance with this resolution, the Building Committee directed plans and estimates to be made by Captain B. S. Alexander, of the United States corps of engineers. These plans were laid before the Board at the last meeting, and approved; reserving, however, to the Building Committee the right to make any changes which they might think desirable during the progress of the work. Mr. Renwick having retired from the office of architect, Captain Alexander was appointed in his place.

It will also be recollected by the Board that, shortly before the close of their last session, Mr. Gilbert Cameron, the former contractor, petitioned the Regents to be allowed to finish the building, alleging that, if he was not granted this privilege, his reputation as a builder would be injured; and also affirming that he was legally entitled to be allowed to complete the work, by the terms of his original contract, which the Board had never declared forfeited.

This subject was referred to the Building Committee, and legal advice was asked by them, in reference to it, from J. M. Carlisle, Esq., who has acted for some years as counsel to the Board of Regents. His opinion was in favor of the claims of Mr. Cameron. The question was also submitted to P. R. Fendall, Esq., United States district attorney, who coincided in opinion with Mr. Carlisle.

In accordance with these opinions, the committee concluded to let Mr. Cameron proceed with the work on the terms which he had previously submitted to them, and which was within the estimate which had been made by the architect.

Some delay unavoidably took place in arriving at this decision, and consequently the work was not commenced until June 18, 1853. Since then, however, it has been prosecuted with great vigor, and to the entire satisfaction of the committee. The roof has been temporarily secured, the entire frame of wood-work which occupied the interior removed, and a cellar excavated. A large brick sewer has been constructed through the middle of the building, and carried outward toward the canal, by which the cellar may be thoroughly drained and all waste water discharged. The foundation walls, piers, and arches, of a spacious and commodious basement, have been completed; the piers in the main story have been built, and the beams and arches of the floor for the rooms above finished. The brick-work of the upper story has also been completed; in short, the masonry from the foundation to the roof, and more than nine-tenths of the brick-work, have been finished. The principal part of the work yet remaining to be accomplished, according to the statement of the architect, may be classified as follows:

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1. Finishing the necessary stairways for the lecture-room and gallery.
2. Supporting the roof, so that the columns in the second story may be dispensed with.
3. Completing the interior finish, such as flooring, plastering, painting, &c.
4. Fitting up the lecture-room with seats.

The committee found great difficulty in deciding upon a proper position and plan of a lecture-room, and, after much deliberation and frequent consultations, finally concluded to place it in the second story, in the middle of the main building, where the greatest width could be obtained.

The original plan contemplated the placing of the large lecture-room on the first floor; but in this position it was impossible to procure a sufficient space, uninterrupted by large columns, which would materially interfere with the employment of the room for the purpose intended. In endeavoring to overcome this difficulty, it was at one time proposed to support the floor of the whole space of fifty feet in width by means of heavy girders; but this being considered unsafe, the idea was abandoned. The only plan, therefore, at the option of the committee for providing a suitable lecture-room, was that which has been adopted. According to the present income and policy of the Institution, this is cheaper than any other plan proposed; and should the building ever be required for other purposes, such as an entire museum or library, the division walls could easily be removed, and the whole space reconverted into one large room. The plan adopted, therefore, makes the best provision for the present wants of the Institution, and can readily be adapted to any proposed change in the future application of the building. The whole of the first story has been thrown into one large room, with arrangements for dividing it, if necessary, by screens, into two apartments, with a central hall or wide passage between.

The committee have kept constantly in view the idea of rendering the main building entirely fire-proof, and of constructing it in the most durable and substantial manner. This they have been enabled to accomplish through the constant supervision of Captain Alexander, who, as it appears to the committee, has successfully evinced in this work a combination of practical skill and scientific knowledge.

From a comparison of the work done with that which remains to be accomplished, the architect is of opinion that, should nothing happen to prevent it, the building will be finished during the present year, and at a cost within the estimate; consequently, the $58,000 recommended to be set aside by the Executive Committee in their last report, together with a portion of the income of the past year, will be sufficient to defray all the expenses, and leave the $150,000 untouched. This refers, however, mainly to the completion of the building, and not to the furniture, which must be purchased by degrees out of the accruing interest on the above-mentioned sum.

At the last session of the Board of Regents a resolution was adopted authorizing the erection of a small building for a magnetic observatory. This structure has been completed, and is now furnished with instruments, and will soon be in successful operation. It consists of a small room twelve feet by sixteen, under ground, enclosed by a nine-inch brick wall, within which the instruments are placed. This room is surrounded by a rough stone wall, leaving a space of two feet in width on each side to permit a free circulation of air, for keeping the interior apartment dry. Above ground the structure is of wood, so finished as to correspond to some extent with the architecture of the Smithsonian building, and consists principally of an entry and one room sixteen feet square, to serve as an office and computing room for the observer. The whole cost of this building is $1,578.28. The entire expenditure on the building during the past year, exclusive of the magnetic observatory, is as follows:

Pay on contracts	$25,500 00
Architect and draughtsmen	1,580 70
Miscellaneous incidentals	261 84
Furniture	471 16
	$27,813 70

Respectfully submitted.

RICHARD RUSH,
JOHN W. MAURY,
JOSEPH HENRY,
Building Committee.

Report of the Building Committee for the year 1854.

The Building Committee of the Smithsonian Institution presents the following report of their operations and expenditures during the year 1854:

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It was stated in the last report that the work of completing the building was commenced by Mr. Gilbert Cameron, the original contractor, under the direction of Captain Alexander, of the engineer corps, on the 18th of June, 1853. It has been uninterruptedly prosecuted from that time to the present, and the committee are now pleased to inform the Board that the main or centre building is finished, with the exception of a few and unimportant additions.

It was, however, discovered, in the progress of the work, that many changes and additions would be required, in the plan adopted, for the better security and adaptation of the building, which would involve an additional expense; but in the present state of the Institution, and in consideration of the long delay in finishing the edifice, the committee thought it best to press on the work.

The main building, which is 200 feet long, 50 feet wide, and 60 feet from the basement floor to the upper ceiling, is divided into three stories. The first story consists of the basement, separated into two large rooms, and the space between them for the heating apparatus. The two apartments are intended for store rooms and other purposes connected with the mechanical operations of the Institution.

The second story consists of one large room, 200 feet long, 50 feet wide, and 25 feet high, the ceiling of which is supported by two rows of columns extending the whole length; at the middle of the space corresponding to the principal entrances, are two wing walls, by which, with the addition of screens, the whole space may be divided into two large rooms, with a hall extending across the building between them. This story may be used for a library or a museum, or for both, as the wants of the Institution may require. It is finished in a simple but chaste style, and has received general commendation. Indeed it is, perhaps, in appearance, one of the most imposing rooms in this country, apart from adaptation to its purposes.

The floor through the middle part is formed of cut stone, that of the other parts is of wood, which, resting on the arches beneath, without space between to contain air, is considered sufficiently fire-proof, and not subject to dampness from the variation of temperature and humidity of the atmosphere.

The upper story is divided into three apartments without pillars, a lecture room of about 100 feet in length in the middle, and two rooms, each 50 feet square, on either side. These rooms are intended for collections. The one on the west may be connected with the library, and that on the east with the museum. The latter has been fitted up with cases in which to deposit the collection of apparatus presented to the Institution by Dr. Hare, the other with a separate case to contain the personal effects of James Smithson. The lecture room, the optical and acoustic properties of which are probably unsurpassed by any apartment intended for the same purpose in the United States, occupies one-half of the upper story of the main building, besides a portion of the front and rear towers; its precise length is 96 feet, and extreme width 62 feet. It will comfortably seat 1,500 persons, and, when crowded, will contain upwards of 2,000. The apartments on each side of the lecture room, besides being fitted up with cases for books, specimens, or apparatus, can be used for meetings of associations, while large assemblies for public discussions can be accommodated in the lecture room.

The whole arrangement of the upper part of the building is made with a view to afford facilities for meetings of large associations which have for their object the promotion, diffusion, or application of knowledge. If at any time the space now occupied by the lecture room should be required for other purposes, the seats and gallery may be removed and the partition walls which are unconnected with the roof may be taken down and the whole upper story converted into one large hall. Besides the main building just finished, the whole edifice consists of two wings, two connecting ranges, and a front and rear projection at the middle on which towers are erected.

The whole amount paid on account of the building, the grounds, and furniture is $299,414.14. The amount paid during the past year is $55,021.14, of which $13,000 is on the work previously done under the direction of the former architect. In order to secure the faithful performance of the work, fifteen per cent. has been withheld from the monthly payments until the whole should be finished. The sum which, on this account, is still due to the contractor, has not yet definitely been ascertained. According to an addendum to the original contract, the Regents were at liberty to make any changes in the building or in the time of its completion which they might deem necessary, and the contractor should receive pro rata, according to the prices agreed upon, for work so executed, and reasonable compensation for damages which might be sustained.

The following letter from the architect will give additional information:

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WASHINGTON, D. C., *December* 30, 1854.

GENTLEMEN: I have the honor to report to you that the work on your building has been prosecuted during the past year without intermission, and that the central portion of it is now nearly completed.

There are some small matters yet to be attended to, and a few trifling repairs and alterations yet to be made in the other parts of the building. These can all be completed in a few weeks.

I am happy to state that the building has been completed without any accident, either to the workmen employed, or to the building itself, and that in my opinion, every part of the work has been substantially done.

I have devoted much study to the plans which have been executed, and given the work my personal supervision nearly every day.

An examination of the rooms of the central building will impress one with the idea of great simplicity. There is not much ornament, but still enough, as I think, to enable the building to do its duty with grace and dignity.

The lower hall is equally adapted to the purposes of a museum or a library. The lecture room is the best which it was possible to make within the walls of the building, and now that it has been completed, I am happy in being enabled to state that were it to be made over again, I would not alter any of its essential features.

I would not be doing justice to Professor Henry were I not to acknowledge the great assistance I have received from him in arranging the details of this room. I am free to confess that during the progress of the work he has given me suggestions which have materially improved my plans.

It will be seen by an examination of the payments which have been made to the contractor, that the cost of completing the building considerably exceeds the estimates which I prepared before the work was begun. This is due in part to the rise in the prices of materials and labor, but principally to the execution of many improvements which were not originally contemplated, but which it was thought best to make during the prosecution of the work. These improvements were the sewers for drainage; the cisterns for supplying water; the substitution of stone for iron stairs; the making of new sashes for many of the windows; the strengthening and in part reconstruction of the roof of the main building, putting in copper gutters and leaders on the towers, besides other alterations and additions tending to swell the cost of the work.

Hoping that my efforts to improve your building will meet your approbation, as well as that of the Board of Regents,

I am, gentlemen, very respectfully, you obedient servant,

B. S. ALEXANDER,
Architect Smithsonian Institution.

TO THE BUILDING COMMITTEE OF THE SMITHSONIAN INSTITUTION.

A full statement of the amount due the contractor cannot be given until a more precise estimate of all the items of work done under the direction of the architect has been made.

Respectfully submitted.

RICHARD RUSH,
WILLIAM H. ENGLISH,
JOSEPH HENRY,
} *Building Committee.*

Report of the Building Committee for the year 1855.

The Building Committee of the Smithsonian Institution present the following report of their operations and expenditures during the year 1855:

It was stated in the last report that the main or centre building was nearly finished on the 1st of January, 1855. Since then the whole edifice has been completed, and the final report of the architect approved by the committee. After the construction of the new lecture-room, the east wing of the building was entirely unoccupied. It consisted of a single room 75 feet long, 45 feet wide, and about 80 feet high. This has been divided into two stories, the lower one principally consisting of a large room at present used for the reception and distribution of all the articles of exchange, and also a depository of the extra copies of the publications of the Institution. The upper story is occupied by a suite of rooms for the accommodation of the Secretary, in accordance with the original intention of the Board, as expressed in their resolution fixing the compensation of that officer. The fitting up of this wing was made under a separate contract with Mr. Wm. Choppin, and the whole completed to the

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satisfaction of the architect for $8,500. This sum includes both the finishing of the large room below and the apartments of the Secretary above.

The grounds around the building have been kept in repair under the direction of the Secretary of the Interior, and it is hoped that an appropriation by Congress will enable this officer to complete the design of Mr. Downing for the general improvement of the Mall, and the supply of specimens of our native forest trees which may be used for ornamental purposes.

The whole amount paid on account of the building during the last year, including furniture and fixtures and grounds, is $19,312.87, which added to the sum previously paid for the same objects as stated in the last report, ($299,414.14,) will make $318,727.01. Of this sum $308,184.49 are for the building and grounds; and if to this we add $4,569.10 due the contractor, and about $1,000 due on gas fitting, fixtures, &c., the whole amount expended on building and grounds, exclusive of furniture, will be $313,753.59. The whole cost of the building was at one time limited to $250,000; but this limitation was made with the intention of finishing the interior of the main edifice in wood and plaster. This plan was afterwards abandoned, and one in which fire-proof materials were employed was substituted.

A statement on file from Capt. Alexander gives in detail the work done and the payments made thereon from the time he took charge of the work until its final completion. According to this, the whole amount paid for completing the interior of the main building in fire-proof materials is $79,684.17. This sum is much larger than his original estimate; the cause of the difference, as stated by himself, being as follows:

"It is due in part to the rise in the prices of materials and labor, but principally to the execution of many improvements which were not originally contemplated, but which it was thought best to make during the prosecution of the work. These improvements were the sewers for drainage; the cisterns for supplying water; the substitution of stone for iron stairs; the making of new sashes for many of the windows; the strengthening and in part reconstruction of the roof of the main building; putting in copper gutters and leaders on the towers, besides other alterations and additions tending to swell the cost of the work."

So many changes had been made in the plan of finishing the interior, and such different materials had been employed, that it was impossible to be guided by the original bid of the contractor, and therefore the committee were obliged to be governed entirely by the estimate of the architect. They, however, took the precaution to submit his award to Capt. Meigs, superintendent of the Capitol extension, who, under the circumstances of the case, expressed his approval of it.

Though the building is finished, an annual appropriation will be required for repairs and the substitution on parts of the roofs of the ranges and wings, of copper in place of tin.

Respectfully submitted.

RICHARD RUSH,
W. H. ENGLISH,
JNO. T. TOWERS,
JOSEPH HENRY,
} *Building Committee.*

Report of the Building Committee for the year 1856.

The Building Committee of the Smithsonian Institution present the following report of their operations and expenditures during the year 1856:

At the date of the last report of the committee, the building was considered finished, but it has been thought best, during the past year, to make a series of additional drains from the principal windows and doors of the basement to the main sewer, which passes under ground from the extreme east end of the building along the middle of the cellar to the west end of the principal edifice, and thence through the grounds to another sewer emptying into the canal. The length of these additional drains in the aggregate amounts to about seven hundred and thirty-three feet. They were necessary to carry off the water which descends through the spouts from the roof, and the rain which falls into the sunken spaces exterior to the windows and doors of the basement. They are constructed of brick, and supplied in each case with a trap to prevent the escape of offensive effluvia.

During the last summer, according to the statement of the Secretary, a very disagreeable odor was perceived in the east wing of the building, which was readily traced to the main sewer. It was observed to be more intense at certain times than at others, and after considerable examination was found to depend on the tide wave

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of the Potomac, which enters the extreme mouth of the sewer, condenses the contained air, and forces it back to the extremity of the drains, where it escapes through the minute crevices of the encasing brick-work. The cause of the difficulty having been discovered, a remedy was readily suggested. This consisted in tapping the main drain before it reached the building, and erecting over the opening a chimney communicating with the exterior atmosphere. Through this the condensed air escapes, the internal pressure is relieved, and the disagreeable effluvium is no longer forced into the building.

The attention of the Building Committee has also been directed by the Secretary to the fact that, in the original plan of the edifice, it was intended to provide for the drainage in a manner differing from the present mode. For this purpose, three large cylindrical excavations were made in the ground, two on the front, and one in the rear of the building. They are each about nine feet in diameter, thirty feet deep, cased with brick, and covered with plank and earth. Fear has been expressed that the wooden coverings of these wells may decay, and that accidents may occur from the breaking through of carriages. The committee would, therefore, recommend that they be either filled up, or permanently secured by a dome of brick over each. The latter plan is perferred, both on account of cheapness and the fact that one of the excavations may hereafter be used as an ice-house, and the others for investigations connected with subterraneous temperature and other physical phenomena.

From the statement of the accounts given by the Executive Committee it will be seen that the following sums have been expended on the building, viz:

Pay on contracts, &c.	$6,036 38
Repairs and miscellaneous incidentals	1,359 23

The first item includes the amount paid the original contractor, Gilbert Cameron, to close his account, and also for the drains and other permanent additions to the building. The second item includes all the sums paid for work done on the roof, and for repairing and painting all the water-courses lined with tinned iron.

Respectfully submitted.

WM. H. ENGLISH,
JOSEPH HENRY, } *Building Committee.*

Report of the Building Committee for the year 1857.

The building of the Smithsonian Institution having been completed, the special object of the Building Committee for which it was originally appointed, might be considered accomplished, and therefore an annual report no longer necessary; but as a large portion of the edifice remained unfinished, and since repairs are required which will probably be very expensive, it is thought proper that the committee should be continued.

At the last session of Congress an appropriation of fifteen thousand dollars was made for cases for the accommodation of the collections belonging to Government. These are now finished and form a beautiful addition to the large hall, and are apparently well adapted to the purpose for which they are intended. With strict economy the appropriation of Congress has been found sufficient to provide accommodations for the present reception of the articles, though in the course of time additional cases will be required.

The west wing of the building, devoted to the library, has been furnished with alcoves and a gallery extending around three sides of the large room. This arrangement, which will serve very much to increase the accommodation and security of the books, produces a very pleasing architectural effect.

The large cisterns in the grounds near the building, which were directed to be arched over at the last session of the Board, have been properly secured, and one of them converted into an ice house.

The balance of a bill for gas fixtures, which had been contracted by the architect, and which remained unsettled, on account of a disagreement as to certain charges, has been finally paid, after a reduction of $352.99.

The peculiar style of architecture of the building, and the large amount of surface it exposes to the weather, renders constant repairs necessary. During the past year almost the whole time of two workmen has been occupied in this service.

Respectfully submitted.

RICHARD RUSH,
WILLIAM H. ENGLISH,
JOSEPH HENRY, } *Building Committee.*

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REPORT OF THE BUILDING COMMITTEE.

It has been stated to the Board that the fire which occurred on the 24th of January, 1865, destroyed the roof and all the interior of the upper story of the main building, the interior of the two large north towers, and also of the large south tower.

The first step toward the reconstruction of the building was to secure the services of a competent person as architect and engineer to prepare plans and superintend the work. For this purpose Mr. Adolph Cluss, who had designed and directed the building of the principal school-houses of the city, was employed.

The next thing to be done was the making of a critical survey to ascertain the actual state of the walls, and to determine what parts it was necessary first to rebuild. This survey forced upon the committee the conviction that the original construction of the building, as a whole, was very defective, and, in many respects, unsuited as a receptacle of records and other valuable articles, the loss of which could never be repaired. The exterior of all the walls consists of a facing of red sandstone, bound to an irregular backing of bluestone of very bad workmanship. In the main building, and in the lower portion of the large south tower, was inserted a four-inch brick lining, separated by an air space from the main walls. This lining is not bound to the walls, and, therefore, does not add to their strength. It is merely a furring, intended to prevent dampness by the condensation of moisture from the atmosphere. This furring is open at the top, and it was into this that the stove-pipe was inserted which led to the accident by fire. In all the other rooms of the towers the plastering was upon the rough rubble work.

The heavy projecting cornice of the south tower was merely set in place without fastening, and, consequently could not withstand any disturbing action.

The parts of the building which were not injured by fire, namely, the two wings and connecting ranges, as far as the committee have had the opportunity of examining, are defective in materials and construction. The floors, in some cases, though covered with flagging and filled in with deafening, rest upon beams of pine wood, which is decayed, and in the course of a few years the interior of these parts will require renewal.

It is proper to state that the foregoing remarks on the character of the materials, and the construction of the building, are not applicable to the work on the main edifice, subsequently executed under the superintendence of Captain (now General) B. S. Alexander, of the United States engineers. This work, which principally consisted in the arching of the basement and main story of the upper building, was executed in fire-proof materials, and prevented the extension of the fire, and, consequently, the destruction of the entire edifice and all its contents.

From the foregoing account of the original construction of the building, it will not be surprising that the effect of the fire was found to be much more serious than previous to this survey it had been supposed, and that the work to be done could not be confined to the mere repairing of the injury caused by the fire, but would include also the rebuilding of a considerable part of the edifice; and this was particularly the case on account of the decision of the Board that the restoration should be in all parts indestructible by fire.

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The heavy projecting cornice of the south tower had fallen down, in part, and the remainder was unfit to receive a new roof.

The high brick columns, extending from the cellar to the eaves of the main building, and supporting the northern wall of the south tower, were so much damaged by the fire as to require to be removed, and, consequently, with them the above-mentioned wall itself. The lining of the upper story of the main building was also so much injured that the greater portion of this will require renewal. But the most instable portion of the building, and that which gave rise to most anxiety, was the principal northern tower. This, which is one hundred and forty feet high, starts from a square base, and is gradually transformed into a regular octagon of smaller dimensions. Four sides of this octagon rest upon the sides of the original square, but project into the interior, while its other four sides extend diagonally across the angles of the square, and are supported by rough and imperfect corbel work, consisting of masses of bluestone very seriously affected by the fire. The tower was originally divided into a series of stories by transverse wooden beams and plank floors, which were entirely destroyed. The anxiety in regard to this tower was increased by observing a vertical crack extending a considerable portion of the height of the tower, but whether this had previously been produced by unequal settling, and had merely been increased by the unequal expansion of the exterior and interior walls, due to the fire, or entirely produced by the latter cause, could not be definitely ascertained. As this part of the building imperatively demanded immediate care, the architect was directed to give it his first attention. After a due consideration of its then present condition and its future use as a receptacle of heavy articles, it was considered necessary to erect within it a lining of solid brick-work nine inches thick, laid in cement, from the bottom to the top, firmly united to the original wall, and serving as the support to iron beams of the brick floors. And, furthermore, it was concluded to fill up, in brick-work, a number of the high, narrow windows in each story, which would add to the strength of the structure without affecting externally its architectural appearance.

A similar construction was directed in the other principal north tower, and the work in both has been executed in such a manner as to give assurance that these parts of the building will not merely be restored, but will also be rendered more stable than they were before the conflagration. The crack above mentioned has been found, by the undisturbed condition of a thin stratum of plaster placed over it, to have remained the same, and the walls, for several months previous and during the winter, have not undergone any perceptible change.

While the work immediately required for the safety of the front towers was in progress, plans were discussed and prepared for the interior of these as well as for that of the south tower, with a view to their better adaptation to the wants of the establishment.

The original plan of the building included four principal staircases leading to the upper story of the edifice, one on each side of the north entrance, and a similar arrangement on the right and another on the left of the south entrance. As these occupied a large portion of useful space, it was thought best to increase the size of those at the north entrance, dispense with those on the southern, and so arrange the heights of the stories of all the towers as to render them more available for the business operations of the establishment.

The work which has been done on the southern tower consists in the removal of the north wall and a considerable part of the upper portion of the other three walls; the preparation of a part of the freestone, from which to reconstruct the exterior wall; the greater portion of the brick-work of the basement, and the furnishing of the cast-iron columns intended to replace the brick piers which supported the northern wall of this tower.

Immediately after the fire, measures were taken by the Secretary to secure the property from the weather by a temporary roof over the main building, and

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s was effected through the kind assistance of the Hon. E. M. Stanton, Secrey of War, who authorized General Meigs, Quartermaster General, to conuct, under the direction of General Rucker, the covering required, though at expense of the Institution. The work was executed, during the most inment period of the year, in the short space of two days. This temporary of, covered with felt saturated with tar, has served the purpose intended. It ll, however, rapidly deteriorate, and, consequently, the first object of the mmittee, during the coming season, will be to decide on the character of the of, and to hasten its completion as rapidly as the work can properly be acmplished.

In the restoration of the building the committee have been governed by the lowing considerations:

1st. To render the work entirely stable, both in regard to material and mode construction.

2d. To render it thoroughly fire-proof.

3d. In view of the great cost at present of material and workmanship, and e condition of the funds of the Institution, at first to do such work as should necessary to preserve the stability of the several parts of the building, and event injury to the property by the weather.

The following is a detailed account of the expenditures on the building up to e close of the operations for the winter. It includes not only the items of penditure immediately connected with the reconstruction, but also those hich were necessary as preliminaries in the security of the property and the mporary repair of such parts as could not be deferred:

Expenditures on the Smithsonian building from January, 1865, to April, 1866.

PRELIMINARY WORK AND CURRENT EXPENSES.

Pay of laborers removing debris after the fire, taking down walls, and general cleaning up	$1,055 29	
Temporary roof, constructed under direction of Quartermaster General	1,974 25	
Pay of carpenters—repairs	254 75	
Pay of blacksmiths	28 25	
Pay of glaziers	121 95	
Pay of plasterers	98 00	
Glass, oil, paints	544 50	
Nails, tools, and hardware	849 33	
Water and gas pipes, new plugs, extensions, and repairs	1,569 44	
Tin work, new roof on tower, and repairs	256 20	
Repairs to felt roof, and miscellaneous items	93 92	
		6,845 88

RECONSTRUCTION OF THE BUILDING.

Iron work, beams, doors, frames, &c.	9,052 22	
Stone	400 00	
Hard brick (240,333, at $15)	3,605 00	
Pressed brick (32,200, at $23)	740 60	
Lumber	2,185 84	
Cement, 774 barrels	1,436 52	
Sand, 545 loads	546 05	
Lime	12 64	
Hardware, nails, steel, iron clamps, tools, &c.	632 82	
Rope, blocks, and derricks	135 95	
Blacksmiths' coal	18 00	

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Bricklayers	6,066 86	
Stonecutters	6,609 29	
Carpenters and laborers	4,464 35	
Blacksmiths	465 37	
Riggers	475 75	
Painters	46 00	
Architect	925 00	
Freight and hauling	822 82	
		38,641
		*$45,486

The following are the estimates of the architect for the work to be complet as far as possible during the present year:

1st. To finish the floor, ceiling, and walls of the northern vestibule or pri cipal entrance to the main building, and doors from this into rooms in the t towers, one on each side; also to put sashes in the tower windows and openin further to roof in main tower, and space between the two front towers; also finish the space occupied by main stairs, $8,000.

2d. For iron work and necessary masonry for the principal staircases a doors into rooms and apartments from the lower hall, about $6,500.

3d. For roofing the main building, $17,500.

4th. For the masonry of the south tower, so far as the completion of the c closure, and for roofing the same, $9,600.

Respectfully submitted.

RICHARD DELAFIELD,
RICHARD WALLACH,
JOSEPH HENRY,
Building Committee.

WASHINGTON, *April* 28, 1866.

* The difference between this sum and that given in the report of the Executive Committee is due to the difference of the dates of the two accounts.

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REPORT OF THE BUILDING COMMITTEE.

The restoration of the building has been prosecuted during the last year as rapidly as the funds at the disposal of the committee and the character of the work would permit.

It will be recollected that the damage occasioned by the fire consisted principally in the destruction of the roof and upper story of the main building, the interior of the large north and south central projections, and the towers connected with them.

It will be further recollected that in the reconstruction of the building, as stated in the last report, the committee were governed by the following considerations:

1. To render the work entirely stable, both as to material and mode of construction.

2. To render it thoroughly fire-proof.

3. In view of the great cost at present of material and workmanship, and the means at the disposal of the committee; to do first, such work as would be necessary to preserve the stability of the several parts of the building, and prevent injury by the weather.

Immediately after the fire, a temporary covering was placed over the main building in such a position as not to interfere with the subsequent erection of the permanent roof. To secure the northern towers, a 9-inch lining of brick was laid in cement from the bottom to the top, and firmly united to the original wall. In this and all the other parts of the building reconstructed, wrought-iron girders and brick arches were substituted for wooden beams and floors.

The large south tower was so much injured that thirty feet of the upper portion had to be taken down and rebuilt, the cost of which was much enhanced by the necessity of recutting a large amount of new stone for the facing. This tower has been divided into six stories, affording as many large rooms, the lower for an extension of the museum, an upper one for the meetings of the Regents, and the others for storage, &c. The offices for the accommodation of the Secretary and assistants will be in the northern towers and connecting space.

The principal access to the second story of the main building is by two large iron staircases, one on either side of the northern entrance. These have been completed.

All the towers and connections with the main building have been covered with substantial roofs. After much inquiry and personal investigation it was concluded to adopt the plan for the roof of the main building of wrought-iron framing, and slate covering, the latter secured in place by wire to iron purlines, and pointed underneath by a coating of cement.

A contract was made for the roof in July with the Phœnix Iron Company, of Philadelphia, the proposals from which were the lowest; but owing to unex-

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pected delays the iron frame was not received until too late in the season f putting on the slate, without injury to the cement by frost. The work w however, be prosecuted as early in the spring as the condition of the weath will permit.

The inside lining of the walls of the second story of the building, which ha been much injured by the fire, has been removed and its place supplied by a ne 9-inch brick wall laid in cement, securely tied and clamped to the outer ston work.

The chairman of the committee has given personal attention to the work i its progress, and can state from actual knowledge that the plans, material a workmanship are of a satisfactory character, alike creditable to the talents a careful supervision of Mr. Cluss, the architect.

The following is an exhibit of the whole amount expended up to the end the year 1866, on the reconstruction of the building:

Detailed statement of payments made on the reconstruction of the Smithsonian building, from January 1, 1865, to January 1, 1867.

Iron-work—beams, doors, frames, &c	$12,728
Iron-work—staircase north hall	4,043
Iron-work—new roof	482
Stone, from quarry at Seneca creek, Maryland	1,468
Stone cutting and setting	14,165
Brick, for walls, floors, &c	7,242
Bricklayers	9,371
Lumber	2,185
Carpenters and laborers	6,571
Cement	1,436
Sand and lime	558
Blacksmiths	544
Hardware—nails, tools, clamps, steel, &c	705
Rope, blocks and derricks	173
Painting	46
Tin roof on northeast tower	168
Felt and pitch for repairing temporary roof	212
Freight and hauling on iron beams and stone	1,027
Slate for new roof	182
Compensation of architect	1,788
	65,104 1

In addition to the above amount which was expended for the reconstruction of the building, under the superintendence of Mr. Adolf Cluss, architect, the following amounts were paid for work done for the preservation of the building after the fire:

Removing debris and clearing up	$1,055 29	
Temporary wooden roof	1,974 25	
Carpenter's work	254 75	
Blacksmith's work	28 25	
Glazier's work	121 95	
Plasterer s work	52 00	
Glass, oil and paint	544 50	
		4,030 9

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aking the whole amount expended on the building in consequence of the fire, during 1865 and 1866	$69,135 09
here was also expended during 1865 and 1866 for general repairs on the parts of the building not injured by the fire, the introduction of additional water-pipes, new plugs, hose, hardware, lumber &c., the sum of	4,268 97
hole expenditure on building for 1865 and 1866	$73,404 06

It is proposed during the present year to complete the roof of the main ilding and all the rooms in the projections and towers, leaving the large room the upper story of the main building unfinished until funds may be accuulated for the purpose, and its future use be determined upon.

Respectfully submitted:

RICHARD DELAFIELD,
Chairman Building Committee.

WASHINGTON, *February* 1867.

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REPORT OF THE BUILDING COMMITTEE FOR 1867.

It was stated in the report presented to the Board at its last session that it was proposed, during the year 1867, to roof the main building and towers and finish the interior of all the rooms, halls, staircases and main entrance, leaving the large room of the upper story, over the museum, unfinished until funds could be provided for the purpose and its future use be determined.

In accordance with this proposition the iron work of the roof over the museum was erected early in the spring, and covered with slate, fastened to the iron purlines with wire, and plastered inside with wall plaster. The iron gutters, as well as the roof, were found perfectly secure from leakage during the hardest summer rains. The severe test of ice and snow during the present winter has shown the necessity for additions in the arrangements for conducting the water from the roof. Plans for this purpose are now under discussion with the architect for persevering in the original plan, or adopting some additional security that the late severe season has indicated to be advisable.

The adaptation of new to old work, in restoring the building from the destructive effects of the fire, by substituting incombustible materials for wooden partitions, floors and roofs, has been attended, as was foreseen, with much labor and expense, as well as making additional means indispensable for rendering the roof-surfaces, valleys, and gutters water-tight in winter, when covered with snow, and occasionally ice, as well as the summer rains. Like the public buildings generally in this city, (and we may say elsewhere,) where battlements extend above the eaves with gutters behind them upon the roof, or resting upon the walls, much inconvenience, and at times damage, arises from leaks, the result of such a system. It is experienced in the Smithsonian building in consequence of the stone battlements capping all its exterior walls. The present architect's original design, approved by the committee, is set forth in his report of the operations of the year, annexed hereto. Neither time nor the funds of the Institution would permit his carrying this part of his plan into operation; and until it is done, together with some additions that the late inclement season has pointed out as advisable and necessary, the building is not secure, nor the property within it, from dampness and moisture.

The introduction of the proposed warming apparatus for all the apartments is the next most essential particular to be undertaken, to be commenced whenever the funds of the Institution will justify.

The security of the several apartments and contents are in a great measure dependent upon such an apparatus as a substitute for the stoves temporarily in use, and for which no permanent smoke-flues or other arrangements were provided.

All the rooms in the north tower, forming three suites of three in each, with two rooms on the entrance floor, one for the janitor and the other for a reception room for visitors, have been completed and are now used and occupied as offices for conducting the operations of the Institution. The several apartments in this north tower, above these offices, have also been completed. The rooms and apartments in the south tower have also been finished and are now occupied. The lower one, or that on the first floor, forms a part of the general museum and is now devoted to the reception of the larger and most weighty

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articles of ethnology, such as the stone images from Central America and the stone sarcophagus from Syria.

The apartments on the next story have been fitted up with shelves, bins, and other fixtures for the transaction of the business of the literary and scientific exchanges, packing and distributing the same.

The apartments next above have been finished for the meetings and convenience of the Board of Regents; and those on the three remaining floors have also been finished and appropriated to storage and such other purposes as may become necessary. In this tower are also provided an elevator, with convenient mechanical power for removing books, specimens, etc., to and from the basement and four stories above it; water-closets and other necessary conveniences, with arrangements for the use of the Potomac water for general purposes and in large quantities in case of fire.

To increase the accommodation, two additional floors have been added to the original subdivision of the stories of the north and south towers. To furnish light to the new rooms in the south tower, circular windows have been opened through the walls, without interfering with the original architectural effect of the exterior, thus furnishing sufficient light for the purpose for which these apartments are intended.

The result of the year's labor has been to provide ample space and convenient accommodation to subserve all the wants of the Secretary of the Institution, to enable him to carry the views of Smithson into effect for the present and several years to come.

The floor-surface in 57 apartments of the building, not including the Secretary's quarters, is 66,252 square feet, or one and fifty-two hundredths of an acre, a space, so far as now can be foreseen, abundantly sufficient for the wants of the Institution, only requiring to be adapted therefor, from time to time, in details, furniture and special finish.

The following is a detailed statement of the expenditures on the building during the year 1867:

FOR RECONSTRUCTION OF PARTS DESTROYED BY THE FIRE.

Iron-work, beams, doors, &c.	$2,791 67
Iron-work, new roof	8,591 50
Stone-cutting and setting	3,354 05
Brick	116 87
Bricklaying	4,277 53
Lumber	1,000 00
Carpentry	7,398 50
Elevator	450 00
Laborers	844 00
Sand	31 82
Blacksmiths	7 50
Hardware	174 90
Rope	8 25
Painting	1,927 00
Frescoing	730 00
Tin and metal work	3,135 26
Slating new roof	3,534 89
Plumbing	1,000 00
Gas-fitting	296 55
Plastering	$2,000 00
Architect	2,315 75
	43,986 04

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In addition to this sum the following expenditures were made on the parts of the building not injured by the fire, or for general repairs:

Carpenters	$960 00	
Plumbers and gas-fitters	132 95	
Paints, oil, glass, and glazing	510 68	
Lumber	335 73	
Miscellaneous	198 55	
		2,137 91
Whole expenditure on building in 1867		46,123 95

Of this expenditure, $8,883 69 were paid out of the appropriation by Congress for the preservation of the government collections.

RICHARD DELAFIELD,
RICHARD WALLACH,
Building Committee.

WASHINGTON, *April* 14, 1868.

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GENERAL

FINANCIAL AND STATISTICAL STATEMENTS

OF THE

SMITHSONIAN INSTITUTION.

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General Statement of Receipts and

RECEIPTS.

	1846.	1847.	1848.	1849.
Interest on Fund	$242,129.00	$46,865.14	$30,910.14	$30,910.14
Premium on Gold				
Interest Hamilton Bequest				
Interest on Treasury Notes		7,621.67	14,536.00	6,780.00
Premium on sale of Notes			481.25	
Interest 6 per cent. Stock				4,614.24
Premium on sale of Stock				2,847.50
Interest State and City Bonds				
Premium sale of Bonds				
Interest Temporary Deposits				
Int. Deposit with Corcoran & Riggs				
Interest United States 7-30 Bonds				
Premium sale of Bonds				
Cash from Friend of Science				
Repayments			1,000.00	
Total	242,129.00	53,986.81	46,927.39	45,151.88

EXPENDITURES.

	1847.	1848.	1849.
Building	$30,210.13	$53,577.75	$55,419.80
Furniture			2,069.52
Meetings	3,823.45	114.25	84.25
Lighting and Heating			378.95
Postage	60.06	65.76	307.36
Stationery	7.02	63.11	85.46
Incidentals	1,947.75	1,337.03	1,847.33
Salaries	1,014.49	4,285.20	4,811.58
Purchase of Books	545.99	365.86	2,878.14
Smithsonian Contributions	756.00	2,956.87	2,062.87
Miscellaneous Collections			152.54
Reports and other Publications			444.00
Meteorology and Researches		625.00	1,089.00
Apparatus	1,546.47	412.71	1,799.90
Laboratory			
Explorations			
Lectures		80.00	543.62
Exchanges	331.59	154.42	465.19
Museum			184.50
Library	35.00	1,350.00	3,923.94
Gallery of Art			11.25
Grounds	1,293.50	109.88	727.17
Magnetic Observatory			
Total	41,071.45	65,477.84	79,328.37

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Expenditures Smithsonian Fund.

RECEIPTS.

1850.	1851.	1852.	1853.	1854.	1855.	1856.
$30,910.14	$30,910.14	$30,910.14	$30,910.14	$30,910.21	$30,910.14	$30,910.14
17,400.00	5,400.00	5,400.00				
2,975.00		28,800.00				
						8,681.97
		9,129.20	10,440.00	7,276.89	6,044.38	2,533.33
51,285.14	36,310.14	74,239.34	41,350.14	38,186.60	36,954.52	37,125.44

EXPENDITURES.

1850.	1851.	1852.	1853.	1854.	1855.	1856.
$28,333.47	$24,320.05	$13,045.97	$27,342.54	$54,012.18	$17,136.90	$7,395.61
1,605.23	1,135.95	951.65	471.16	990.24	2.088.04	400.13
216.12	291.20	267.18	195.00	467.71	849.65	369.50
58.50	486.35	399.70	646.47	887.30	1,022.80	1,303.92
183.05	870.78	472.07	364.28	467.67	495.41	696.76
231.85	419.96	222.38	6.50	662.50	411.98	109.67
1,441.72	1,878.43	2,821.34	3,352.42		1,257.26	883,92
4,548.48	3,799.92	4,299.92	4,466.92	7,100.91	6,164.92	6,608.88
4,225.25	2,016.90	1,098.77	841.75	2,166.50	3,186.15	3,692.05
3,662.36	3,211.76	5,736.74	8,160.04	3,773.96	3,562.92	4,355 38
585.98	100.00	1,007.86	1,116.58	917.89	316.83	158.20
935.91	473.82	1,616.75	139.29	83.84	350.00	75.50
1,346.66	804.50	2,154.88	3,129.51	2,213.38	1,924.78	2,422.65
899.92	148.69	844.88	203.50	427.26	257.06	739.18
					123.14	629.91
150.00	50.00		250.00	250.00	150.00	158.25
2,651.77	1,888.24	1,708.25	1,107.24	1,105.31	1,015.42	864.50
651.80	2,010.49	2,178.33	2,807.38	2,738.65	1,930.78	1,517.54
1,416.00	2,195.09	2,778.52	2,469.67	2,693.65	3,270.19	3,249.60
3,274.13	3,576.81	5,430.97	5,399.40	4,352.04	2,289.02	2,331.89
273.30	16.00			50.00	83.18	100.56
1,615.96	515.54	49.45			74.25	46.50
			1,578.28	18.77	13.68	48.80
58,307.46	49,710.48	47,085.61	64,047.93	85,379.71	47,924.36	38,158,90

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General Statement—

RECEIPTS.

	1857.	1858.	1859.	1860.
Interest on Fund	$30,910.14	$30,910.14	$30,910.14	$30,910.14
Premium on Gold				
Interest Hamilton Bequest				
Interest on Treasury Notes				
Premium on sale of Notes				
Interest 6 per cent. Stock				
Premium on sale of Stock				
Interest State and City Bonds	7,401.97	7,410.00	7,416.00	7,716.00
Premium sale of Bonds				
Interest Temporary Deposits				
Int. Deposit with Corcoran & Riggs				
Interest United States 7-30 Bonds				
Premium sale of Bonds				
Cash from Friend of Science				
Repayments				
Total	38,312.11	38,320.14	38,326.14	38,626.14

EXPENDITURES.

	1857.	1858.	1859.	1860.
Building	$3,305.12	$566.62	$1,054.28	$1,480.55
Furniture	687.91	497.99	409.49	944.21
Meetings	281.00	301.38	14.50	225.35
Lighting and Heating	1,244.33	712.23	902.68	987.41
Postage	524.02	442.35	558.65	587.54
Stationery	347.94	413.00	289.37	393.50
Incidentals	624.07	376.17	570.06	755.94
Salaries	6,979.54	5,536.83	6,321.35	6,895.97
Purchase of Books	2,019.83	3,258.51	2,530.83	2,382.19
Smithsonian Contributions	6,230.02	6,834.02	3,964.15	5,520.59
Miscellaneous Collections	649.90	654.24	686.37	1,131.48
Reports and other Publications	342.00	1,053.79	1,831.19	816.11
Meteorology and Researches	2,715.24	2,475.62	3,711.41	5,184.07
Apparatus	191.66	266.57	766.13	784.78
Laboratory	341.38	243 60	68.36	150.81
Explorations	57.52	114.13	315.65	476.45
Lectures	1,114.36	939.16	879.20	892.74
Exchanges	2,501.24	1,326.90	2,027.94	2,348.04
Museum	3,445.47	4,523.05	6,055.24	3,046.91
Library	1,394.12	1,797.40	1,589.74	1,638.48
Gallery of Art	82.87	121.20	30.00	237.18
Grounds	20.00			
Magnetic Observatory	49.62	43.26	256.80	308.00
Total	35,149.16	32,498.02	34,833.39	37,188.30

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Continued.

RECEIPTS.

1861.	1862.	1863.	1864.	1865.	1866.	1867.
$30,910.14	$30,910.14	$30,910.14	$30,910.14	$30,910.14	$30,910.14	$37,330.82
				48,273.16	40,691.26	14,255.41
3,750.00	4,515.37	3,755.50	3,756.00	3,750.00	5,052.00	2,060.00
						4,184.24
				478.36	380.82	
						7,907.00
						3,318.00
						527.74
34,660.14	35,425.51	34,665.64	34,666.14	83,411.66	77,034.22	69,583.21

EXPENDITURES.

1861.	1862.	1863.	1864.	1865.	1866.	1867.
$906.19	$1,672.84	$1,598.79	$1,066.32	$37,930.71	$35,473.35	$37,240.26
828.43	565.32	512.99	1,554.45	1,191.06	955.31	1,410.48
66.00	81.00	104.50	131.50	123.64	127.00	256.50
1,074.94	1,142.26	1,434.46	1,816.36	1,207.95	1,555.54	1,013.20
389.08	353.36	421.46	408.38	568.61	452.84	714.45
194.60	281.38	486.09	502.77	539.01	485.14	892.79
400.38	315.02	584.65	631.36	1,683.89	1,213.12	741.19
6,402.10	6,249.00	6,260.65	6,538.00	7,081.20	7,743.60	8,676.65
915.78	1,513.63	1,844.65	1,953.67	611.86	873.24	719.10
3,936.85	932.97	2,545.48	2,224.57	5,651.18	3,776.17	4,621.76
1,627.63	3,774.25	3,535.88	6,449.06	2,113.84	5,702.67	2,045.20
1,225.50	219.88	1,025.00	757.00	935.51	1,377.80	920.18
3,170.04	2,057.88	2,560.97	1,464.15	827.50	1,017.90	1,044.39
711.70	119.06	531.98	102.74	2.50	496.85	457.82
161.42	408.45	129.59	160.78	185.26	122.98	17.41
432.25	555.29	762.39	797 76		872.31	923.49
804.94	759.51	1,094.32	1,012.70			
1,499.47	2,724.88	1,735.31	3,779.61	2,807.76	2,252.60	3,701.93
2,883.68	2,501.13	3,090.69	4,576.87	6,228.26	3,263.20	9,678.58
1,290.99	1,606.01	1,414.50	1,491.66	1,400.00	600.00	
214.95	128.50	147.00	116.25	198.00		
29,136.92	27,961.07	31,821.35	37,535.96	71,237.74	67,861.62	75,075.38

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General Statement—

RECEIPTS.

	1868.	1869.	1870.	1871.
Interest on Fund	$39,000.00	$39,000.00	$39,000.00	$39,000.00
Premium on Gold	14,527.50	10,515.20	4,363.12	4,192.50
Interest Hamilton Bequest				
Interest on Treasury Notes				
Premium on sale of Notes				
Interest 6 per cent. Stock				
Premium on sale of Stock				
Interest State and City Bonds	1,067.33			
Premium sale of Bonds				
Interest Temporary Deposits				
Int. Deposit with Corcoran & Riggs				
Interest United States 7-30 Bonds				
Premium sale of Bonds				
Cash from Friend of Science			1,200.00	
Repayments	1,372.94	1,717.36	926.26	
Total	55,967.77	51,232.56	45.489.38	43,192.50

EXPENDITURES.

	1868.	1869.	1870.	1871.
Building	$21,203.69	$4,109.95	$4,712.93	$8,827.12
Furniture	2,982.38	2,520.95	180.20	205.29
Meetings	303.37	122.00	178.25	127.12
Lighting and Heating	1,362.85	1,628.90	1,921.64	346.84
Postage	456.89	289.50	770.98	448.76
Stationery	345.92	437.18	829.19	452.55
Incidentals	876.51	651.14	867.29	354.75
Salaries	9,552.80	7,814.92	10,273.30	9,572.62
Purchase of Books	775.42	436.04	249.76	253.86
Smithsonian Contributions	4,633.09	1,987.18	6,986.57	9,753.68
Miscellaneous Collections	1,177.45	3,037.50	3,065.37	608.12
Reports and other Publications	1,050.75	1,458.55	283.45	739.48
Meteorology and Researches	1,011.47	1,581.10	3,119.00	2,006.55
Apparatus	99.70	146.80	249.70	744.03
Laboratory				1,301.07
Explorations	1,682.57	611.54	1,414.13	
Lectures			755.00	285.00
Exchanges	4,870.72	4,860.94	4,165.62	4,201.50
Museum	4,715,01	8,821.46	5,008.84	8,132.95
Library				
Gallery of Art		100.00		
Grounds				
Magnetic Observatory				
Total	57,100.59	40,615.65	44,981.22	48,355.29

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Continued.

RECEIPTS.

1872.	1873.	1874.	1875.	1876.	1877.	TOTAL.
$39,000.00	$39,000.00	$39,000.00	$39,000.00	$39,000.00	$39,000.00	$1,803,117.69
4,911.55	5,191.87	4,308.85	5,581.88	3,522.23	1,511.26	161,845.29
----------	----------	50.88	67.61	65.36	62.82	246.17
----------	----------	----------	----------	----------	----------	28,937.67
----------	----------	----------	----------	----------	----------	481.25
----------	----------	----------	----------	----------	----------	32,814.24
----------	----------	----------	----------	----------	----------	34,622.50
3,004.90	1,091.83	2,695.83	4,750.11	2,907.75	2,885.76	78,668.32
----------	----------	----------	----------	----------	----------	4,184.24
----------	----------	----------	----------	----------	----------	859.18
----------	----------	----------	----------	----------	----------	35,423.30
----------	----------	----------	----------	----------	----------	7,907.00
----------	----------	----------	----------	----------	----------	3,318.00
----------	----------	----------	----------	----------	----------	1,200.00
----------	----------	----------	----------	50.00	5,548.28	11,142.58
46,916.45	45,283.70	46,055.06	49,399.60	45,545.34	49,007.62	1,704,767.43

EXPENDITURES.

1872.	1873.	1874.	1875.	1876.	1877.	TOTAL.
$6,672.85	$3,252.23	$3,507.66	$1,802.94	$2,561.71	$3,668.80	$493,408.26
1,625.87	886.26	717.73	412.17	704.62	361.86	29,336.89
155.50	800.75	312.87	227.25	300.75	197.50	10,116.04
971.67	877.03	828.62	1,745.55	1,140.99	1,267.19	30,366.63
320.73	971.10	81.07	366.25	320.64	162.31	13,042.17
541.62	394.91	492.64	413.56	525.71	286.16	11,765.46
525.62	757.47	817.17	836.08	860.57	560.60	31,770.25
11,153.83	12,429.96	12,730.00	13,161.50	12,541.97	13,162.11	234,159.12
----------	411.34	457.43	203.37	596.80	416.77	43,441.44
6,394.17	8,706.08	7,022.98	12,518.31	7,331.43	6,412.46	156,242.61
1,661.99	4,514.46	7,363.67	288.45	3,116.21	2,205.81	59,765.43
527.50	593.55	758.32	1,453.26	603.50	994.09	23,085.52
2,550.00	3,232.81	881.97	1,432.72	2,324.34	985.43	61,058.87
645.00	815.09	1,142.60	235.60	1,241.59	1,406.14	18,437.61
169.87	109.88	9.10	41.72	94.44	63.38	4,482.55
----------	228.00	----------	----------	----------	879.50	10,631.23
600.00	600.00	600.00	400.00	----------	----------	21,701.28
5,870.32	6,251.74	5,589.89	6,748.80	10,199.10	9,790.73	104,041.21
5,034.07	278.31	703.00	4,522.45	2,663.84	421.23	107,851.46
----------	----------	----------	----------	----------	----------	46,136.10
----------	----------	----------	----------	----------	1,710.83	3,621.07
----------	----------	----------	----------	----------	----------	4,452.25
----------	----------	----------	----------	----------	----------	2,317.21
45,420.11	45,110.97	44,016.72	46,809.98	47,128.21	44,952.90	1,521,230.66

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Summary.

Receipts from interest and other sources, 1846–1877		$1,704,767.42
HOW DISPOSED OF.		
Added to the original fund, in the Treasury of the United States	$108,620.87	
Invested in Virginia bonds	49,882.50	
Disbursed for current expenses	1,521,230.66	
Balance on hand, January, 1878	25,083.90	
		$1,704,767.42

Statement of the condition of the Smithson fund at the beginning of the year 1878.

The amount originally received as the bequest of James Smithson, of England, deposited in the Treasury of the United States in accordance with the act of Congress of August 10, 1846	$515,169.00
The residuary legacy of Smithson, received in 1865, deposited in the Treasury of the United States in accordance with the act of Congress of February 8, 1867	26,210.63
Total bequest of Smithson	541,379 63
Amount deposited in the Treasury of the United States, as authorized by act of Congress of February 8, 1867, derived from savings of income and increase in value of investments	108,620.87
Amount received as the bequest of James Hamilton, of Carlisle, Pa., February 24, 1874	1,000.00
Total permanent Smithson fund in the Treasury of the United States, bearing interest at 6 per cent., payable semi-annually in gold	651,000.00

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Statistics of Literary and Scientific Exchanges of the Smithsonian Institution.

Year.	Received for the Smithsonian Library.				For other institutions in the U. S.		Forwarded to foreign countries.					Cost of Exchanges.
	Vols.	Parts and Pamphlets.	Maps and Engravings.	Total.	*Addresses.*	*Packages.*	*No. of addresses.	*No. of packages.	No. of boxes.	Bulk, in cubic ft.	Weight, in pounds.	
1846–50	470	624	4	1,098	----	----	----	----	----	----	----	$1,603.00
1851	549	618	----	1,167	----	----	201	500	40	240	7,920	2 010.49
1852	1,481	2,106	1,749	5,336	96	637	382	572	46	263	9,885	2,178.33
1853	1,440	991	125	2,556	160	1,052	382	625	48	392	12,200	2,807.38
1854	926	1,468	434	2,828	149	987	375	526*	38	365	9,791	2,738.65
1855	1,037	1,707	26	2,770	219	1,445	418	825	33	358	10,481	1,930.78
1856	1,356	1,834	140	3,330	189	1,245	511	1,251	70	586	18,271	1,517.54
1857	555	1,067	138	1,760	193	1,273	505	965	40	384	14,248	2,500.24
1858	728	1,695	122	2,540	243	1,539	525	913	56	672	22,674	1,826.90
1859	1,022	2,540	40	3,602	293	1,933	825	2,735	82	1,054	29,480	2,027.94
1860	1,271	4,180	220	5,671	335	1,908	525	1,692	61	767	20,029	2,348.04
1861	821	1,945	120	2,886	274	1,406	665	1,099	73	625	16,958	1,499.47
1862	1,611	3,369	55	5,035	273	2,111	846	1,203	114	1,006	28,836	2,724.88
1863	910	3,479	200	4,589	273	1,522	783	1,428	61	447	10,286	1,735.31
1864	823	2,754	109	3,686	299	2,482	843	1,011	63	546	20,500	3,779.61
1865	767	3,256	183	4,206	345	2,368	783	1,176	77	557	18,630	2,807.76
1866	1,243	4,509	121	5,873	329	2,703	827	1,170	83	571	18,050	2,252.60
1867	1,557	3,946	328	5,831	347	971	1,001	1,190	113	975	22,523	3,701.93
1868	1,770	3,605	134	5,509	436	2,894	1,129	1,557	104	1,057	31,171	4,870.72
1869	1,234	4,089	232	5,555	501	4,130	1,569	1,734	112	1,033	23,376	4,860.94
1870	1,113	3,890	179	5,182	567	3,705	1,425	1,805	121	1,189	31,383	4,165.62
1871	936	3,579	82	4,597	573	3,952	1,432	1,778	108	772	28,950	4,201.50
1872	1,262	4,502	198	5,962	587	4,635	1,544	2,561	179	954	26,850	5,870.32
1873	889	4,354	454	5,697	689	4,782	1,856	2,735	196	1,476	44,236	6,251.74
1874	863	4,521	162	5,546	750	4,326	1,248	1,828	131	933	27,990	5,589.89
1875	1,120	5,813	114	7,047	610	4,661	1,982	2,903	208	1,503	45.300	6,748.80
1876	1,017	6.193	375	7,585	644	4.853	3,078	4,508	323	2,261	80,750	10,199.10
1877	1,889	6,511	826	8,726	766	4,962	3,870	5,685	406	3,276	117,000	9,790.78
Total	30,655	89,145	6,370	126,170	10,140	68,482	29,510	45,973	2,986	24,282	747,768	$104,040.21

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Statement of Appropriations and Expenditures from the National Treasury.

(From Executive Document No. 34, 45th Congress, Second Session.)

GENERAL OBJECT.	Date of act making the appropriation.	Amount of appropriation.	Year of expenditure.	Expenditure by warrants.	Repayments.	Amount carried to the surplus fund.	Net expenditures.
Prosecution of the claim to the Smithsonian bequest.							
The President authorized to constitute and appoint an agent or agents to assert and prosecute for and in behalf of the United States, and in their name or otherwise, as may be advisable, in the court of chancery or other proper tribunal of England, the right of the United States to the legacy bequeathed to them by the last will and testament of James Smithson, late of London, deceased, for the purpose of founding at Washington, under the name of the Smithsonian Institution, an establishment for the increase and diffusion of knowledge among men; and to empower such agent or agents so appointed to receive and grant acquittances for all such sum or sums of money or other funds as may or shall be decreed or adjudged to the United States for or on account of said legacy	July 1, 1886	$10,000.00	1886	$10,000.00	------	------	$10,000.00
For defraying the expenses attending the prosecution of the claim of the United States to the legacy bequeathed by the late James Smithson, of London	Oct. 16, 1887	5,000.00	1887	5,000.00	------	------	3,866.16
	------	------	1889	2,858.51	$3,492.35	------	
	------	------	1840	------	------	$1,133.84	
Total	------	15,000.00	------	17,858.51	3,492.35	1,133.84	13,866.16

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The act of July 7, 1838, provides that all the money arising from the bequest of the late James Smithson, of London, for the purpose of founding at Washington, in this District, an institution to be denominated the Smithsonian Institution, which may be paid into the Treasury, is hereby appropriated and shall be invested by the Secretary of the Treasury, with the approbation of the President of the United States, in stocks of States, bearing interest at the rate of not less than five per centum per annum; which said stocks shall be held by the said Secretary in trust for the uses specified in the last will and testament of said Smithson until provision is made by law for carrying the purpose of said bequest into effect; and that the annual interest accrued on the stock aforesaid shall be in like manner invested for the benefit of said institution	July 7, 1838	$518,258.03	1838	$517,770.67			$517,770.67
		15,540.00	1839	12,837.50			12,837.50
		32,640.00	1840	33,758.00			33,758.00
		35,400.00	1841	37,471.86			37,471.86
		9,458.59	1842	9,458.59			9,458.59
		3,102.42	1843	653.05			653.05
		1,781.98	1844	4,231.35			4,231.35
		10,624.56	1845	2,977.00			2,977.00
		14,124.73	1846	21,674.25			21,674.25
		9,832.73	1847	7,852.69			7,852.69
		9,874.54	1848				
		10,949.36	1849				
		10,609.47	1850	32,986.88			32,986.88
		11,197.06	1851	5,393.13			5,393.13
		13,996.32	1852	13,887.50			13,887.50
		15,391.06	1853	17,923.38			17,923.38
		25,767.94	1854	150.00	75.00		75.00
		25,621.54	1855				
		12,880.19	1856				
		30,006.31	1857				
		30,168.49	1858				
		14,447.70	1859				
		12,687.70	1860				
By the act of September 11, 1841, the above is repealed, and it is provided that the Secretary of the Treasury shall, until Congress shall appropriate said accruing interest to the purpose prescribed by the testator, for the increase and diffusion of knowledge among men, invest said accruing interest in any stock of the United States bearing a rate of interest not less than five per centum per annum	Sept. 11, 1841	74,729.51	1861				
		9,867.70	1862				
		25,845.85	1863				
		24,998.75	1864				
		5,364.00	1865				
		5,364.00	1866				
		5,364.00	1867				
		109,992.81	1868				
		84,402.00	1869	2,500.00			2,500.00
Total		1,169,809.84		721,525.85	75.00		721,450.85
Balance						448,358.49	

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Statement of Appropriations and Expenditures from the National Treasury—Continued.

GENERAL OBJECT.	Date of act making the appropriation.	Amount of appropriation.	Year of expenditure.	Expenditure by warrants.	Repayments.	Amount carried to the surplus fund.	Net expenditures.
Compensation to Richard Rush.							
To Richard Rush, for extra services in converting the Smithsonian funds received by him as agent of the United States, into gold coin, and for his aid and supervision in transporting the same from London to the Mint at Philadelphia	Mar. 3, 1843	$3,815.73	1843	$3,815.73			$3,815.73
Interest account.							
The act of August 10, 1846, provides that so much of the property of the said James Smithson as has been received in money and paid into the Treasury of the United States, being the sum of $515,169, be lent to the United States Treasury, at six per cent. per annum interest from September 1, 1838, when the same was received into the said Treasury, and that so much of the interest as may have accrued on said sum on the first day of July next, which will amount to the sum of $242,129, or so much thereof as shall by the Board of Regents of the Institution established by this act be deemed necessary, be, and the same is hereby, appropriated for the erection of suitable buildings and for other current incidental expenses of said Institution, and that six per cent.	Aug. 10, 1846	$257,584.07	1847	$257,584.07			$257,584.07
		30,910.14	1848	30,910.07			30,910.07
		30,910.14	1849	30,910.14			30,910.14
		30,910.14	1850	30,910.14			30,910.14
		30,910.14	1851	30,910.14			30,910.14
		30,910.14	1852	30,910.14			30,910.14
		30,910.14	1853	30,910.14			30,910.14
		30,910.14	1854	30,910.14			30,910.14
		30,910.14	1855	30,910.21			30,910.21
		30,910.14	1856	30,910.14			30,910.14
		30,910.14	1857	30,910.14			30,910.14
		30,910.14	1858	30,910.14			30,910.14
		30,910.14	1859	30,910.14			30,910.14
		30,910.14	1860	30,910.14			30,910.14
		30,910.14	1861	30,910.14			30,910.14
		30,910.14	1862	30,910.14			30,910.14

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interest on the said trust-fund, it being the said amount of $515,169 received into the United States Treasury September 1, 1838, payable in half-yearly payments, on the first of January and July in each year, be, and the same is hereby, appropriated for the perpetual maintenance and support of said Institution; and all expenditures and appropriations to be made from time to time, to the purposes of the Institution aforesaid, shall be exclusively from the accruing interest, and not from the principal of the said fund		30,910.14	1863	30,910.14			30,910.14
		30,910.14	1864	30,910.14			30,910.14
		30,910.14	1865	30,910.14			30,910.14
		30,910.14	1866	30,910.14			30,910.14
		30,910.14	1867	30,910.14			30,910.14
		37,330.82	1868	37,330.82			37,330.82
		39,000.00	1869	39,000.00			39,000.00
		39,000.00	1870	39,000.00			39,000.00
		39,000.00	1871	39,000.00			39,000.00
		39,000.00	1872	39,000.00			39,000 00
		39,000.00	1873	39,000.00			39,000.00
		39,000.00	1874	39,000.00			39,000.00
		39,050.88	1875	39,050.88			39,050.88
		39,060.00	1876	39,060.00			39,060.00
Total		1,225,228.57		1,225,228.57			1,225,228.57
Improvement of grounds.							
For planting and finishing the roads and walks through that portion of the public mall surrounding the Smithsonian Institution	July 1, 1852	$7,000.00	1853	$7,000.00			$7,000.00
Transferred from appropriation for office Secretary of the Interior		500.00	1854	500.00			500.00
For repairing the fence around that portion of the mall upon which the Smithsonian Institution is situated	June 12, 1858	1,000.00	1859	1,000.00			1,000.00
For seats of wood, in the Smithsonian grounds	June 25, 1860	100.00	1860	100.00			100.00
For repairing the fence around that portion of the mall upon which the Smithsonian building is situated	June 25, 1860	500.00	1861	500.00			500.00
			1862	476.50	$476.50		
For repairs and rebuilding fence around Smithsonian grounds	Mar. 3, 1863	2,000.00	1864	1,131.00			1,131.00
			1865	869.00			681.50
For rebuilding fence (destroyed by fire) around the Smithsonian Institution	Apr. 7, 1866	200.00	1866	200.00			
			1870		387.50	$387.50	
Total		11,300.00		11,776.50	864.00	387.50	10,912.50

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Statement of Appropriations and Expenditures from the National Treasury—Continued.

GENERAL OBJECT.	Date of act making the appropriation.	Amount of appropriation.	Year of expenditure.	Expenditure by warrants.	Repayments.	Amount carried to the surplus fund.	Net expenditures.
Preserving collections of the Exploring expeditions.							
For the preservation of the collections of the surveying and exploring expeditions of the Government	June 2, 1858	$4,000.00	1859	$4,000.00	----------	----------	$4,000.00
	Mar. 3, 1859	4,000.00	1860	4,000.00	----------	----------	4,000.00
	June 25, 1860	4,000.00	1861	4,000.00	----------	----------	4,000.00
	Mar. 2, 1861	4,000.00	1862	4,000.00	----------	----------	4,000.00
	Mar. 1, 1862	4,000.00	1863	4,000.00	----------	----------	4,000.00
	Mar. 3, 1863	4,000.00	1864	4,000.00	----------	----------	4,000.00
	July 2, 1864	4,000.00	1865	2,000.00	----------	----------	2,000.00
	Apr. 7, 1866	4,000.00	1866	6,000.00	----------	----------	6,000.00
	July 28, 1866	4,000.00	1867	1,992.50	----------	----------	1,992.50
	Mar. 2, 1867	10,000.00	1868	12,000.00	----------	----------	12,000.00
	July 20, 1868	4,000.00	1869	4,000.00	----------	----------	4,000.00
	Mar. 3, 1869	4,000.00	1870	4,000.00	----------	----------	4,000.00
	July 15, 1870	10,000.00	1871	10,000.00	----------	----------	10,000.00
	Mar. 3, 1871	10,000.00	1872	10,000.00	----------	7.50	10,000.00
	June 10, 1872	15,000.00	1873	15,000.00	----------	----------	15,000.00
	Mar. 3, 1873	15,000.00	1874	15,000.00	----------	----------	15,000.00
	June 23, 1874	20,000.00	1875	20,000.00	----------	----------	20,000.00
	Mar. 3, 1875	20,000.00	1876	20,000.00	----------	----------	20,000.00
Total	----------	144,000.00	----------	143,992.50	----------	7.50	143,992.50
Completion and fitting up of halls.							
Towards the completion of the hall required for the Government collections	July 15, 1870	$10,000.00	1871	$10,000.00	----------	----------	$10,000.00
	Mar. 3, 1871	10,000.00	1872	10,000.00	----------	----------	10,000.00

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To commence the proper fitting up, in a fire-proof manner, of the vacant apartments in the Smithsonian Institution building for the proper distribution and exhibition of the Government collections of natural history, geology, and mineralogy	May 18, 1872	$5,000.00	1873	$5,000.00			$5,000.00
For the completion of the hall required for the Government collections	June 10, 1872	10,000.00	1873	10,000.00			10,000.00
For fitting up the new halls required for the Government collections	Mar. 3, 1873	15,000.00					
For steam-heating apparatus of the same	Mar. 3, 1873	12,000.00	1874	27,000.00			27,000.00
For fitting up and completing the cases in the new halls required for the Government collections	June 23, 1874	10,000.00	1875	10,000.00			10,000.00
For fitting up new halls required for the Government collections	Mar. 3, 1875	10,000.00					
To complete the heating apparatus of the National Museum	Mar. 3, 1875	2,500.00	1876	12,500.00			12,500.00
Total		84,500.00		84,500.00			84,500.00
Transfer of collections.							
For the construction and erection of suitable cases to receive the collections of the United States exploring expedition and others, in geology, mineralogy, belonging to the United States now in the Patent Office and elsewhere in Washington	Mar. 3, 1857	$15,000.00					
For the expense of the transfer of these collections and the permanent arrangement of the cases	Mar. 3, 1857	2,000.00	1858	17,000.00			$17,000.00
For the transfer to and new arrangement of these collections in the Smithsonian Institution	June 2, 1858	1,000.00	1859	1,000.00			1,000.00
Total		18,000.00		18,000.00			18,000.00

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Statement of Appropriations and Expenditures from the National Treasury—Continued.

GENERAL OBJECT.	Date of act making the appropriation.	Amount of appropriation.	Year of expenditure.	Expenditure by warrants.	Repayments.	Amount carried to the surplus fund.	Net expenditures.
Distribution of duplicate specimens and construction of new cases.							
For the distribution of the collections of the exploring and surveying expeditions of the Government, and the construction of additional cases to receive such part of said collections as may be retained by the Government	Mar. 2, 1861	$6,000.00	1862	$6,000.00			$6,000.00
Total		6,000.00		6,000.00			6,000.00
International Exhibition.							
To enable the Executive Departments of the Government and the Smithsonian Institution to participate in the International Exhibition of 1876	Mar. 3, 1875	$67,000.00					
For the purpose of paying the expenses of transportation, care and custody, arranging and exhibiting, and safe return of articles belonging to the United States to be presented and exhibited in the United States building at the Centennial Exhibition at Philadelphia: For the Smithsonian Institution	May 1, 1876	21,000.00	1876	54,948 83		$16,051.17	54,948.83
			1876	10,000.00			10,000.00
Total		88,000.00		64,948.83		16,051.17	64,948.83
Balance						7,000.00	

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RECAPITULATION.

	Balances.	Transfers to.	Transfers from.	Amount of appropriation.	Expenditure by warrants.	Repayments.	Amount carried to the surplus fund.	Net expenditures.
Prosecution of the claim to the Smithsonian bequest				$15,000.00	$17,358.51	$3,492.35	$1,133.84	$18,866.16
Investment account	$448,358.49			1,169,809.34	721,525.85	75.00		721,450.85
Compensation to Richard Rush				3,815.73	3,815.73			3,815.73
Interest account				1,225,228.57	1,225,228.57			1,225,228.57
Improvement of grounds		$500.00		10,800.00	11,776.50	864.00	387.50	10,912.50
Preserving collections of the exploring expeditions				144,000.00	143,992.50		7.50	143,992.50
Completion and fitting up of halls				84,500.00	84,500.00			84,500.00
Transfer of collections				18,000.00	18,000.00			18,000.00
Distribution of collections and construction of cases				6,000.00	6,000.00			6,000.00
International Exhibition	7,000.00		$16,051.17	88,000.00	64,948.83			64,948.83
Total	455,358.49	500.00	16,051.17	2,765,158.64	2,297,146.49	4,431.35	1,528.84	2,292,715.14

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REGENTS OF THE SMITHSONIAN INSTITUTION.

THE BOARD OF REGENTS OF THE SMITHSONIAN INSTITUTION consists of fifteen members, five of whom constitute a quorum, and is composed of—

The Vice-President of the United States, the Chief Justice, and the *Mayor* or *Governor* of the District of Columbia, by virtue of, and during continuance in office;

Three members of the Senate, appointed by the President of the Senate, for the time they hold, without re-election, their office as Senators;

Three members of the House of Representatives, appointed by the Speaker, biennially; on the 4th Wednesday of December, to serve until the fourth Wednesday in December, the second succeeding their appointment;

Six members, other than members of Congress, elected by joint resolution of Congress, for the term of *six* years, two of whom are to be resident in Washington; the other four from States, and *no two* from the same State.

Vacancies in the Board from the classes of Senators and Members are filled by motion in either House, as in the case of vacancies in Committees of either House.

Vacancies in the class of the citizens of States and City of Washington are filled by joint resolution of Congress.

LIST OF REGENTS

From the organization of the Smithsonian Institution in 1846, *to* 1879 *inclusive.*

	Attendance.	
	Years.	*Meetings.*
AGASSIZ, LOUIS, Massachusetts.		
Elected by Congress February 21, 1868.		
Re-elected March 2, 1869.		
Died, December 14, 1878.		
Attended meetings of the Board, 1864,[1] 1865,[1] 1867,[2] 1868,[3] 1878[2]	5	9
ASTOR, WM. B., New York.		
Elected by Congress March 2, 1861.		
Re-elected January 11, 1868.		
Attended, 1864,[2] 1867[1]	2	3
BACHE, ALEX. DALLAS, District of Columbia.		
Elected by Congress August 10, 1846.		
Re-elected January 13, 1853.		
" January 17, 1859.		
Died, February 17, 1867.		
Attended, 1846,[3] 1847,[26] 1848,[4] 1849,[3] 1850,[4] 1851,[4] 1852,[5] 1853,[3] 1854,[6] 1855,[7] 1856,[3] 1857,[3] 1858,[3] 1859,[2] 1860,[4] 1861,[2] 1862,[1] 1863,[2] 1864[3]	19	95
BADGER, GEORGE EDMUND, North Carolina.		
Elected by Congress February 27, 1856.		
Re-elected January 17, 1859; expelled Feb. 21, 1868, "for giving aid and comfort to the enemies of the Government."		
Attended, 1857,[2] 1858,[2] 1860[1]	3	5

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	Attendance. Years.	Meetings.
BANCROFT, GEORGE, District of Columbia.		
Elected by Congress December 11, 1874. Resigned, March, 1878. Attended, 1875,[2] 1876,[2] 1877,[2] 1878[1]	4	7
BERRET, JAMES G., District of Columbia.		
Ex-officio as Mayor of Washington. Attended, 1859,[2] 1860[3]	2	5
BERRIEN, JOHN McPHERSON, Georgia.		
Elected by Congress January 18, 1853. Died, January 1, 1856. Attended, 1855[4]	1	4
BOWEN, SAYLES J., District of Columbia.		
Ex-officio as Mayor of Washington. Attended, 1869,[1] 1870[1]	2	2
BRECKINRIDGE, JOHN CABELL, Kentucky.		
Ex-officio as Vice-President of the United States. Attended, 1857,[1] 1858,[2] 1859,[1] 1860[3]	4	8
BREESE, SIDNEY, Illinois.		
Appointed by Vice-President August 10, 1846. Attended, 1846,[5] 1847,[16] 1848[3]	3	24
CASS, LEWIS, Michigan, 1847.		
Appointed by Vice-President January 18, 1847. Resigned, December, 1847. Attended, 1847[10]	1	10
CHARLTON, ROBERT M., Georgia.		
Appointed by Vice-President August 24, 1852. Attended, 1853[4]	1	4
CHASE, SALMON P., Ohio.		
Ex-officio as Chief Justice of the United States. Died, May 7, 1873. Attended, 1865,[2] 1866,[1] 1867,[3] 1868,[4] 1870,[2] 1872,[1] 1873[3]	7	16
CHOATE, RUFUS, Massachusetts.		
Elected by Congress August 10, 1846. Re-elected December 19, 1848. " December 27, 1854. Resigned, January 13, 1855. Attended, 1846,[6] 1847,[10] 1854,[1] 1855[2]	4	19
CLIFFORD, NATHAN, Maine.		
Ex-officio Chief Justice of the United States, (acting.) Attended, 1873,[1] 1874[2]	2	3
CLYMER, HIESTER, Pennsylvania.		
Appointed by Speaker December 14, 1875. " " January 14, 1878. Attended, 1876,[2] 1877,[2] 1878,[3] 1879[3]	4	10

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	Attendance. Years.	Meetings.
COLCOCK, WM. F., Georgia.		
Appointed by Speaker January 7, 1850.		
" " January 2, 1852.		
" " January 11, 1858.		
Attended, 1850,[6] 1851,[2] 1852,[5] 1853[4]	4	17
COLFAX, SCHUYLER, Indiana.		
Appointed by Speaker December 19, 1861.		
Ex-officio as Vice-President of the United States, 1869–1873.		
Attended, 1862,[1] 1863,[1] 1872,[1] 1873[1]	4	4
COOKE, HENRY D., District of Columbia.		
Ex-officio as Governor of the District of Columbia.		
Attended, 1872[2]	1	2
COPPÉE, HENRY, Pennsylvania.		
Elected by Congress January 19, 1874.		
Attended, 1874,[1] 1875,[2] 1876,[1] 1878[2] 1879[3]	5	9
COX, SAMUEL S., Ohio and New York.		
Appointed by Speaker December 19, 1861.		
" " December 23, 1863.		
" " February 2, 1870.		
" " December 18, 1873.		
Attended, 1862,[2] 1863,[3] 1864,[1] 1865,[3] 1870,[2] 1871,[1] 1872,[1] 1874,[1] 1875[1]	9	15
DALLAS, GEORGE M., Pennsylvania.		
Ex-officio as Vice-President of the United States.		
Attended, 1846,[7] 1847,[26] 1848,[3] 1849[2]	4	88
DANA, JAMES D., Connecticut.		
Elected by Congress January 19, 1874	0	0
Resigned, December 27, 1877.		
DAVIS, GARRETT, Kentucky.		
Appointed by Vice-President January 16, 1863.		
Died, September, 1872.		
Attended, 1863,[2] 1864,[1] 1865,[3] 1866,[3] 1867,[1] 1868,[2] 1869,[1] 1870,[1] 1872[1]	9	15
DAVIS, HENRY WINTER, Maryland.		
Appointed by Speaker December 23, 1863.		
Died, December, 1865.		
Attended, 1864[1]	1	1
DAVIS, JEFFERSON, Mississippi.		
Appointed by Vice-President December 30, 1847.		
" " March 6, 1851.		
Attended, 1848,[4] 1849,[2] 1850,[10] 1851[5]	4	21
DAYTON, WM. L., New Jersey.		
Elected by Congress March 2, 1861.	0	0
Died, December 2, 1864.		
DELAFIELD, RICHARD, District of Columbia.		
Elected by Congress February 14, 1865.		
Resigned, January 25, 1871.		
Attended, 1866,[4] 1867,[3] 1868,[5] 1869,[1] 1870[3]	5	16

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	Attendance. Years.	Meetings.
DOUGLAS, STEPHEN A., Illinois.		
Appointed by Vice-President February 21, 1854. " " January 26, 1860. Died, June 8, 1861. Attended, 1854,[4] 1855,[4] 1856,[3] 1857,[3] 1858,[4] 1859,[2] 1860,[3] 1861[3]	8	24
EMERY, MATTHEW G., District of Columbia.		
Ex-officio as Mayor of Washington. Attended, 1871[1]	1	1
ENGLISH, WM. H., Indiana.		
Appointed by Speaker December 14, 1853. " " February 26, 1856. " " December 14, 1857. " " February 21, 1860. Attended, 1854,[3] 1855,[4] 1856,[5] 1857,[3] 1858,[2] 1859,[3] 1860,[3] 1861[3]	8	31
EVANS, GEO., Maine.		
Appointed by Vice-President August 10, 1846. Attended, 1846,[4] 1847[12]	2	17
FARNSWORTH, JOHN F., Illinois.		
Appointed by Speaker December 27, 1865. Attended, 1866,[3] 1867[2]	2	5
FELTON, CORNELIUS C., Massachusetts.		
Elected by Congress February 27, 1856. Re-elected March 2, 1861. Died February 26, 1862. Attended, 1857,[3] 1858,[3] 1860[2]	3	7
FERRY, THOS. W., Michigan.		
Ex-officio Acting Vice-President of the United States. Attended, 1876,[2] 1877[1]	2	2
FESSENDEN, WM. P., Maine.		
Appointed by Vice-President December 4, 1861. " " March 7, 1865. Died, September, 8, 1869. Attended, 1863,[1] 1864,[1] 1866,[1] 1867,[1] 1869[1]	5	5
FILLMORE, MILLARD, New York.		
Ex-officio as Vice-President of the United States. Attended, 1849,[1] 1850[10]	2	11
FITCH, GRAHAM N., Indiana.		
Appointed by Speaker January 7, 1850. " " January 2, 1852. Attended, 1850,[10] 1851,[4] 1852,[6] 1853[2]	4	24
FOSTER, LAFAYETTE S., Connecticut.		
Acting Vice-President of the United States. Attended, 1866,[3] 1867[1]	2	4

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	Attendance. Years.	Meetings.
GARFIELD, JAMES A., Ohio.		
Appointed by Speaker December 27, 1865.		
" " January 7, 1868.		
" " February 2, 1870.		
" " January, 1872.		
" " January 14, 1878.		
Attended, 1866,[3] 1867,[3] 1868,[3] 1869,[1] 1870,[2] 1871,[1] 1872,[1] 1873,[4] 1878,[4] 1879,[3]	10	25
GARTRELL, LUCIUS J., Georgia.		
Appointed by Speaker December 14, 1857.		
" " February 21, 1860.		
Attended, 1858,[1] 1859[1]	2	2
GRAY, ASA, Massachusetts.		
Elected by Congress January 19, 1874.		
Attended, 1874,[1] 1875,[2] 1876,[1] 1877,[2] 1878,[3] 1879[3]	6	12
HAMLIN, HANNIBAL, Maine.		
Ex-officio as Vice-President of the United States.		
Appointed by Vice-President January 18, 1870.		
Attended, 1862,[2] 1863,[2] 1864,[3] 1865,[3] 1870,[2] 1871,[2] 1872,[2] 1873,[4] 1874,[2] 1875,[2] 1877,[3] 1878,[2] 1879[1]	13	30
HAWLEY, GIDEON, New York.		
Elected by Congress August 10, 1846.		
Re-elected December 19, 1848.		
" December 27, 1854.		
Attended, 1846[3], 1847,[4] 1851,[2] 1854,[4] 1855[3]	5	21
HAZLETON, GERRY W., Wisconsin.		
Appointed by Speaker December 19, 1873.		
Attended, 1874,[2] 1875[1]	2	3
HILL, BENJAMIN H., Georgia.		
Appointed by Speaker December 14, 1875.		
Attended, 1876,[1] 1877[1]	2	3
HILLIARD, HENRY W., Alabama.		
Appointed by Speaker August 10, 1846.		
" " December 22, 1847.		
" " January 7, 1850.		
Attended, 1846,[3] 1847,[22] 1848,[2] 1849,[1] 1850,[7] 1851[3]	6	43
HOAR, E. ROCKWOOD, Massachusetts.		
Appointed by Speaker December 19, 1873.		
Attended, 1874,[2] 1875[2]	2	4
HOUGH, WM. J., New York.		
Appointed by Speaker September 10, 1846.		
Attended, 1846,[3] 1847[22]	2	30
LENOX, WALTER, District of Columbia.		
Ex-officio as Mayor of Washington.		
Attended, 1850,[2] 1851,[4] 1852[7]	3	13
McCLELLAND, ROBERT, Michigan.		
Appointed by Speaker December 22, 1847.		
Attended, 1847,[3] 1848,[3] 1849[2]	3	3

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	Attendance. Years.	Meetings.
McCRARY, GEO. W., Iowa.		
Appointed by Speaker December 14, 1875.		
Attended, 1876,[1] 1877[1]	2	2
MACLEAN, JOHN, New Jersey.		
Elected by Congress January 11, 1868.		
Re-elected January 19, 1874.		
Attended, 1868,[2] 1869,[1] 1870,[2] 1871,[1] 1873,[2] 1874,[1] 1876,[1] 1878,[2] 1879[2]	9	15
McPHERSON, EDWARD, Pennsylvania.		
Appointed by Speaker December 19, 1861.		
Attended, 1862,[2] 1863[2]	2	5
MAGRUDER, WM. B., District of Columbia.		
Ex-officio as Mayor of Washington.		
Attended, 1856,[1] 1857[2]	2	8
MARSH, GEO. P., Vermont.		
Appointed by Speaker December 22, 1847.		
Attended, 1847,[3] 1848,[3] 1849[2]	3	8
MASON, JAMES M., Virginia.		
Appointed by Vice-President March 6, 1851.		
" " March 6, 1857.		
Attended, 1849,[1] 1850,[6] 1851,[4] 1852,[5] 1853,[4] 1854,[6] 1855,[5] 1856,[5] 1857,[3] 1858,[4] 1859,[1] 1860,[2] 1861[2]	13	43
MAURY, JOHN W.		
Ex officio as Mayor of Washington.		
Attended, 1852,[2] 1853,[5] 1854[9]	3	16
MEACHAM, JAMES, Vermont.		
Appointed by Speaker January 2, 1852.		
" " December 14, 1853.		
" " February 26, 1856.		
Attended, 1852,[5] 1853,[5] 1854,[3] 1855[2]	4	20
OWEN, ROBERT DALE, Indiana.		
Appointed by Speaker August 10, 1846.		
Attended, 1846,[3] 1847[23]	2	30
PARKER, PETER, District of Columbia.		
Elected by Congress January 11, 1868.		
Re-elected January 19, 1874.		
Attended, 1868,[6] 1869,[1] 1870,[2] 1871,[2] 1872,[2] 1873,[4] 1874,[3] 1875,[3] 1876,[2] 1877,[3] 1878,[4] 1879[3]	12	37
PATTERSON, JAMES W., New Hampshire.		
Appointed by Speaker December 23, 1863.		
" " January, 1866.		
Attended, 1864,[3] 1865,[4] 1866,[5] 1867[3]	4	13
PEARCE, JAMES A., Maryland.		
Appointed by Vice-President February 22, 1847.		
" " June 19 1856.		
" " March 7, 1861.		
Died, December 20, 1862.		
Attended, 1847,[4] 1848,[3] 1849,[1] 1850,[7] 1851,[5] 1852,[7] 1853,[2] 1854,[9] 1855,[3] 1856,[5] 1857,[4] 1858,[2] 1859,[1] 1860,[5] 1861,[2] 1862[2]	16	67

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	Attendance. Years.	Meetings.
PENNYBACKER, ISAAC S.		
Appointed by Vice-President September 10, 1846. Died, January 12, 1847. Attended, 1846[4]	1	4
POLAND, LUKE P.		
Appointed by Speaker March 7, 1867. " " January 7, 1868. " " February 2, 1870. Attended, 1868,[3] 1870,[3] 1871,[2] 1872,[3] 1873[4]	5	15
PRESTON, WM. C., South Carolina.		
Elected by Congress August 10, 1846. Died, May 25, 1860. Attended, 1847[1]	1	1
PORTER, NOAH, Connecticut.		
Elected by Congress January 26, 1878. Attended, 1878,[1] 1879[3]	2	4
PRUYN, JOHN V. L., New York.		
Appointed by Speaker January 7, 1868. Attended, 1868,[6] 1869[1]	2	6
RUSH, RICHARD, Pennsylvania.		
Elected by Congress August 10, 1846. Re-elected December 24, 1850. " January 28, 1857. Died, July 30, 1859. Attended, 1846,[6] 1847,[10] 1850,[2] 1851,[3] 1852,[3] 1853,[3] 1854,[3] 1855,[4] 1856[2]	9	37
SARGENT, AARON A., California.		
Appointed by Vice-President January 18, 1874. Attended, 1874,[2] 1875,[2] 1876,[2] 1877,[2] 1878,[2] 1879[3]	6	13
SEATON, WM. W., District of Columbia.		
Ex-officio as Mayor of Washington, September 10, 1846. Attended, 1846,[6] 1847,[25] 1848,[4] 1849,[2] 1850,[6]	5	47
SHEPHERD, ALEXANDER R., District of Columbia.		
Ex-officio as Governor of the District of Columbia. Attended, 1874[1]	1	1
SHERMAN, WM. T., District of Columbia.		
Elected by Congress January 30, 1871. Resigned, November 12, 1874. Elected by Congress March 25, 1878. Attended, 1871,[1] 1873,[3] 1874,[1] 1878,[3] 1879[3]	5	10
STANTON, BENJAMIN, Ohio.		
Appointed by Speaker February 23, 1856. " " February 21, 1860. Attended, 1857,[4] 1858,[2] 1860,[2] 1861[2]	4	10
STEPHENS, ALEX. H., Georgia.		
Appointed by Speaker January 14, 1878.		
STEVENSON, JOHN W., Kentucky.		
Appointed by Vice-President December 10, 1872. Attended, 1873,[3] 1874,[2] 1875,[1] 1876,[1] 1877[3]	5	8

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	Attendance. Years.	Meetings.
STUART, DAVID, Michigan.		
Appointed by Speaker December 14, 1853.		
Attended, 1854,[6] 1855[2]	2	8
TANEY, ROGER B., Maryland.		
Ex-officio as Chief Justice of the United States.		
Died, October 12, 1864.		
Attended, 1846,[3] 1851,[2] 1852,[6] 1854,[4] 1855,[5] 1856,[3] 1857,[1] 1858[1]	8	25
TOTTEN, JOSEPH G., District of Columbia.		
Elected by Congress August 10, 1846.		
Re-elected December 24, 1850.		
" January 28, 1857.		
Died, April 22, 1864.		
Attended, 1846,[6] 1847,[11] 1848,[4] 1849,[8] 1850,[2] 1851,[3] 1852,[9] 1853,[5] 1854,[7] 1855,[6] 1856,[7] 1857,[1] 1861,[3] 1862,[1] 1863,[1] 1864[2]	16	70
TOWERS, JOHN T., District of Columbia.		
Ex-officio as Mayor of Washington.		
Attended, 1854,[1] 1855,[5] 1856[1]	3	7
TRUMBULL, LYMAN, Illinois.		
Appointed by Vice-President December 4, 1861.		
Attended, 1862,[2] 1863,[2] 1864,[1] 1865,[3] 1866,[3] 1867,[1] 1868,[3] 1869,[1] 1870,[2] 1872,[2] 1873[3]	11	24
WADE, BENJAMIN F., Ohio.		
Ex-officio as Acting Vice-President of the United States.		
Attended, 1868,[4] 1869[1]	2	5
WAITE, MORRISON R., Ohio.		
Ex-officio as Chief Justice of the United States.		
Attended, 1874,[1] 1875,[2] 1876,[2] 1877,[2] 1878,[4] 1879[3]	6	14
WALLACH, RICHARD, District of Columbia.		
Ex-officio as Mayor of Washington.		
Attended, 1862,[3] 1863,[1] 1864,[4] 1865,[3] 1866,[4] 1867,[3] 1868[4]	7	22
WARNER, HIRAM, Georgia.		
Appointed by Speaker February 26, 1856.		
Attended, 1856,[5] 1857[1]	2	6
WILSON, HENRY, Massachusetts.		
Ex-officio as Vice-President of the United States.		
Attended, 1875[1]	1	1
WHEELER, WM. A., New York.		
Ex-officio as Vice-President of the United States.		
Attended, 1878,[1] 1879[2]	2	3
WITHERS, ROBERT E., Virginia.		
Appointed by Vice-President November 1, 1877.		
Attended, 1878,[4] 1879[3]	2	7
WOOLSEY, THEODORE D., Connecticut.		
Elected by Congress April 2, 1862.		
Re-elected January 11, 1868.		
Attended, 1862,[1] 1866[1]	2	2

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LIST OF REGENTS

ACCORDING TO MODE OF APPOINTMENT.

Vice-Presidents of the United States,

Ex-officio.

	Commencement of Term.		Commencement of Term.
G. M. Dallas	1846	B. F. Wade	1867
M. Fillmore	1849	S. Colfax	1869
J. C. Breckinridge	1857	H. Wilson	1873
H. Hamlin	1861	T. W. Ferry	1876
L. S. Foster	1865	W. A. Wheeler	1877

Chief Justices of the United States,

Ex-officio.

R. B. Taney	1846	N. Clifford	1873
S. P. Chase	1864	M. R. Waite	1874

Mayors of Washington,

Ex-officio.

W. W. Seaton	1846	J. G. Berret	1859
W. Lenox	1850	R. Wallach	1862
J. W. Maury	1852	S. J. Bowen	1869
J. T. Towers	1854	M. G. Emery	1871
W. B. Magruder	1856		

Governors of the District of Columbia,

Ex-officio.

H. D. Cooke	1872	A. R. Shepherd	1874

Senators,

Appointed by President of the Senate.

Geo. Evans	1846	L. Trumbull	1862
S. Breese	1846	G. Davis	1863
I. S. Pennybacker	1846	W. P. Fessenden	1863
L. Cass	1847	H. Hamlin	1870
J. A. Pearce	1847	J. W. Stevenson	1873
J. M. Mason	1849	A. A. Sargent	1874
R. M. Charlton	1853	R. E. Withers	1878
S. A. Douglas	1854		

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Representatives,

Appointed by the Speaker of the House.

R. D. Owen	1846	S. S. Cox	1861
H. W. Hilliard	1846	E. McPherson	1861
W. J. Hough	1846	H. W. Davis	1863
G. P. Marsh	1847	J. W. Patterson	1863
R. McClelland	1847	J. A. Garfield	1866
W. F. Colcock	1850	J. V. Farnsworth	1866
G. N. Fitch	1850	L. P. Poland	1867
J. Meacham	1852	J. V. L. Pruyn	1868
W. H. English	1853	E. R. Hoar	1873
D. Stuart	1853	G. W. Hazelton	1873
H. Warner	1856	H. Clymer	1875
B. Stanton	1856	B. H. Hill	1875
L. J. Gartrell	1857	G. W. McCrary	1875
S. Colfax	1861	A. H. Stephens	1878

Citizens from States,

Elected by joint resolution of the Senate and House.

R. Choate, Mass.	1846	W. L. Dayton, N. J.	1861
G. Hawley, N. Y.	1846	T. D. Woolsey, Ct.	1862
R. Rush, Pa.	1846	L. Agassiz, Mass.	1863
W. C. Preston, S. C.	1846	J. McLean, N. J.	1868
J. M. P. Berrien, Ga.	1853	H. Coppée, Pa.	1874
C. C. Felton, Mass.	1856	A. Gray, Mass.	1874
G. E. Badger, N. C.	1856	J. D. Dana, Ct.	1874
W. B. Astor, N. Y.	1861	N. Porter, Ct.	1878

Citizens from City of Washington,

Elected by joint resolution of the Senate and House.

A. D. Bache	1846	Peter Parker	1868
J. G. Totten	1846	W. T. Sherman	1871
R. Delafield	1865	Geo. Bancroft	1874

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LIST OF REGENTS

ACCORDING TO RESIDENCE.

Alabama.....Hilliard.
California.....Sargent.
Connecticut.....Dana, Foster, Porter, Woolsey.
District of Columbia...Bache, Bancroft, Berret, Bowen, Cooke, Delafield, Emery, Lenox, Magruder, Maury, Parker, Seaton, Shepherd, Sherman, Totten, Towers, Wallach.
Georgia.....Berrien, Charlton, Colcock, Gartrell, Hill, Stephens, Warner.
Illinois.....Breese, Douglas, Farnsworth, Trumbull.
Indiana.....Colfax, English, Fitch, Owen.
Iowa.....McCrary.
Kentucky.....Breckinridge, G. Davis, Stevenson.
Maine.....Clifford, Evans, Fessenden, Hamlin.
Maryland.....H. W. Davis, Pearce, Taney.
Massachusetts.....Agassiz, Choate, Felton, Gray, Hoar, Wilson.
Michigan.....Cass, Ferry, McClelland, Stuart.
Mississippi.....Jeff. Davis.
New Hampshire.....Patterson.
New Jersey.....Dayton, Maclean.
New York.....Astor, Cox, Fillmore, Hawley, Hough, Pruyn, Wheeler.
North Carolina.....Badger.
Ohio.....Chase, Cox, Garfield, Stanton, Wade, Waite.
Pennsylvania.....Clymer, Coppee, Dallas, McPherson, Rush.
South Carolina.....Preston.
Vermont.....Marsh, Meacham, Poland.
Virginia.....Mason, Pennybacker, Withers.
Wisconsin.....Hazelton.

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AN ACT

TO ESTABLISH

THE SMITHSONIAN INSTITUTION.

AN ACT to establish the "Smithsonian Institution," for the increase and diffusion of knowledge among men.

James Smithson, Esquire, of London, in the Kingdom of Great Britain, having by his last will and testament given the whole of his property to the United States of America, to found at Washington, under the name of the Smithsonian Institution, an establishment for the increase and diffusion of knowledge among men; and the United States having, by an act of Congress, received said property and accepted said trust; therefore, for the faithful execution of said trust according to the will of the liberal and enlightened donor—

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That the President and Vice President of the United States, the Secretary of State, the Secretary of the Treasury, the Secretary of War, the Secretary of the Navy, the Postmaster General, the Attorney General, the Chief Justice, and the Commissioner of the Patent Office of the United States, and the Mayor of the city of Washington, during the time for which they shall hold their respective offices, and such other persons as they may elect honorary members, be, and they are hereby, constituted an "establishment," by the name of the "Smithsonian Institution," for the increase and diffusion of knowledge among men; and by that name shall be known and have perpetual succession, with the powers, limitations, and restrictions hereinafter contained, and no other.

SEC. 2. *And be it further enacted*, That so much of the property of the said James Smithson as has been received in

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money, and paid into the Treasury of the United States, being the sum of five hundred and fifteen thousand one hundred and sixty-nine dollars, be lent to the United States Treasury, at six per cent. per annum interest from the first day of September, in the year one thousand eight hundred and thirty-eight, when the same was received into the said Treasury; and that so much of the interest as may have accrued on said sum on the first day of July next, which will amount to the sum of two hundred and forty-two thousand one hundred and twenty-nine dollars, or so much thereof as shall by the Board of Regents of the Institution established by this act be deemed necessary, be, and the same is hereby, appropriated for the erection of suitable buildings, and for other current incidental expenses of said Institution; and that six per cent. interest on the said trust fund—it being the said amount of five hundred and fifteen thousand one hundred and sixty-nine dollars received into the United States Treasury on the first of September, one thousand eight hundred and thirty-eight, payable, in half-yearly payments, on the first of January and July in each year be, and the same is hereby, appropriated for the perpetual maintenance and support of said Institution; and all expenditures and appropriations to be made from time to time, to the purposes of the Institution aforesaid, shall be exclusively from the accruing interest, and not from the principal of the said fund. *And be it further enacted*, That all the moneys and stocks which have been, or may hereafter be, received into the Treasury of the United States on account of the fund bequeathed by James Smithson, be, and the same hereby are, pledged to refund to the Treasury of the United States the sums hereby appropriated.

SEC. 3. *And be it further enacted*, That the business of the said Institution shall be conducted at the city of Washington by a Board of Regents by the name of the Regents of the "Smithsonian Institution," to be composed of the Vice President of the United States, the Chief Justice

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of the United States, and the mayor of the city of Washington, during the time for which they shall hold their respective offices; three members of the Senate and three members of the House of Representatives, together with six other persons, other than members of Congress, two of whom shall be members of the National Institute in the city of Washington, and resident in the said city; and the other four thereof shall be inhabitants of States, and no two of them of the same State. All the Regents, to be selected as aforesaid, shall be appointed immediately after the passage of this act—the members of the Senate by the President thereof, the members of the House by the Speaker thereof, and the six other persons by joint resolution of the Senate and House of Representatives; and the members of the House so appointed shall serve until the fourth Wednesday in December, the second next after the passage of this act; and then, and biennially thereafter, on every alternate fourth Wednesday of December, a like number shall be appointed in the same manner, to serve until the fourth Wednesday in December, the second succeeding their appointment. And the Senators so appointed shall serve during the term for which they shall hold, without re-election, their office as Senators. And vacancies, occasioned by death, resignation, or otherwise, shall be filled as vacancies in committees are filled; and the other six members aforesaid shall serve, two for two years, two for four years, and two for six years; the terms of service, in the first place, to be determined by lot; but after the first term, then their regular term of service shall be six years; and new elections thereof shall be made by joint resolution of Congress; and vacancies occasioned by death, resignation, or otherwise, may be filled in like manner, by joint resolution of Congress. And the said Regents shall meet in the city of Washington on the first Monday of September next after the passage of this act, and organize by the election of one of their number as Chancellor, who shall be the presiding

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officer of said Board of Regents, by the name of the Chancellor of the "Smithsonian Institution," and a suitable person as Secretary of said Institution, who shall also be the Secretary of said Board of Regents; said Board shall also elect three of their own body as an Executive Committee, and said Regents shall then fix on the time for the regular meetings, of said Board; and on application of any three of the Regents to the Secretary of the said Institution, it shall be his duty to appoint a special meeting of the Board of Regents, of which he shall give notice by letter to each of the members; and at any meeting of said Board, five shall constitute a quorum to do business. And each member of said Board shall be paid his necessary travelling and other actual expenses in attending meetings of the Board, which shall be audited by the Executive Committee, and recorded by the Secretary of said Board; but his services as Regent shall be gratuitous. And whenever money is required for the payment of the debts or performance of the contracts of the Institution, incurred or entered into in conformity with the provisions of this act, or for making the purchases and executing the objects authorized by this act, the Board of Regents, or the Executive Committee thereof, may certify to the Chancellor and Secretary of the Board that such sum of money is required; whereupon, they shall examine the same, and, if they shall approve thereof, shall certify the same to the proper officer of the Treasury for payment. And the said Board shall submit to Congress, at each session thereof, a report of the operations, expenditures, and condition of the Institution.

SEC. 4. *And be it further enacted*, That after the Board of Regents shall have met, and become organized, it shall be their duty forthwith to proceed to select a suitable site for such building as may be necessary for the Institution; which ground may be taken and appropriated out of that part of the public ground in the city of Washington, lying between the Patent Office and Seventh street: *Provided*, The Presi-

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dent of the United States, the Secretary of State, the Secretary of the Treasury, the Secretary of War, the Secretary of the Navy, and the Commissioner of the Patent Office, shall consent to the same; but if the persons last named shall not consent, then such location may be made upon any other of the public grounds within the city of Washington, belonging to the United States, which said Regents may select, by and with the consent of the persons herein named; and the said ground so selected shall be set out by proper metes and bounds, and a description of the same shall be made and recorded in a book to be provided for that purpose, and signed by the said Regents, or so many of them as may be convened at the time of their said organization; and such record, or a copy thereof, certified by the Chancellor and Secretary of the Board of Regents, shall be received in evidence in all courts of the extent and boundaries of the lands appropriated to the said Institution; and upon the making of such record, such site and lands shall be deemed and taken to be appropriated, by force of this act, to the said Institution.

SEC. 5. *And be it further enacted*, That, so soon as the Board of Regents shall have selected the said site, they shall cause to be erected a suitable building, of plain and durable materials and structure, without unnecessary ornament, and of sufficient size, and with suitable rooms, or halls, for the reception and arrangement, upon a liberal scale, of objects of natural history, including a geological and mineralogical cabinet; also a chemical laboratory, a library, a gallery of art, and the necessary lecture rooms; and the said Board shall have authority, by themselves or by a committee of three of their members, to contract for the completion of such building, upon such plan as may be directed by the Board of Regents, and shall take sufficient security for the building and finishing the same according to the said plan, and in the time stipulated in such contract; and may so locate said building, if they shall deem it proper, as in appearance

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to form a wing to the Patent Office building, and may so connect the same with the present hall of said Patent Office building, containing the National Cabinet of Curiosities, as to constitute the said hall, in whole or in part, the deposite for the cabinet of said Institution, if they deem it expedient to do so; provided said building shall be located upon said Patent Office lot in the manner aforesaid: *Provided, however,* That the whole expense of building and enclosures aforesaid shall not exceed the amount of ———; which sum is hereby appropriated, payable out of money in the Treasury not otherwise appropriated; together with such sum or sums out of the annual interest accruing to the Institution, as may, in any year, remain unexpended, after paying the current expenses of the Institution. And duplicates of all such contracts as may be made by the said Board of Regents shall be deposited with the Treasurer of the United States; and all claims on any contract made as aforesaid shall be allowed and certified by the Board of Regents, or the Executive Committee thereof, as the case may be, and, being signed by the Chancellor and Secretary of the Board, shall be a sufficient voucher for settlement and payment at the Treasury of the United States. And the Board of Regents shall be authorized to employ such persons as they may deem necessary to superintend the erection of the building and fitting up the rooms of the Institution. And all laws for the protection of public property in the city of Washington shall apply to, and be in force for, the protection of the lands, buildings, and other property of said Institution. And all moneys recovered by, or accruing to, the Institution, shall be paid into the Treasury of the United States to the credit of the Smithsonian bequest, and separately accounted for, as provided in the act approved July first, eighteen hundred and thirty-six, accepting said bequest.

SEC. 6. *And be it further enacted,* That, in proportion as suitable arrangements can be made for their reception,

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all objects of art and of foreign and curious research, and all objects of natural history, plants, and geological and mineralogical specimens belonging, or hereafter to belong, to the United States, which may be in the city of Washington, in whosesoever custody the same may be, shall be delivered to such persons as may be authorized by the Board of Regents to receive them, and shall be arranged in such order, and so classed, as best to facilitate the examination and study of them, in the building so as aforesaid to be erected for the Institution; and the Regents of said Institution shall afterwards, as new specimens in natural history, geology, or mineralogy, may be obtained for the museum of the Institution, by exchanges of duplicate specimens belonging to the Institution, (which they are hereby authorized to make,) or by donation, which they may receive, or otherwise, cause such new specimens to be also appropriately classed and arranged. And the minerals, books, manuscripts, and other property of James Smithson, which have been received by the Government of the United States, and are now placed in the Department of State, shall be removed to said Institution, and shall be preserved separate and apart from other property of the Institution.

SEC. 7. *And be it further enacted*, That the Secretary of the Board of Regents shall take charge of the building and property of said Institution, and shall, under their direction, make a fair and accurate record of all their proceedings, to be preserved in said Institution; and the said Secretary shall also discharge the duties of librarian and keeper of the museum, and may, with the consent of the Board of Regents, employ assistants; and the said officers shall receive for their services such sums as may be allowed by the Board of Regents, to be paid semi-annually on the first days of January and July; and the said officers shall be removable by the Board of Regents, whenever, in their judgment, the interests of the Institution require any of the said officers to be changed.

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SEC. 8. *And be it further enacted*, That the members and honorary members of said Institution may hold such stated and special meetings, for the supervision of the affairs of said Institution and the advice and instruction of said Board of Regents, to be called in the manner provided for in the by-laws of said Institution, at which the President, and, in his absence, the Vice-President of the United States shall preside. And the said Regents shall make, from the interest of said fund, an appropriation, not exceeding an average of twenty-five thousand dollars annually, for the gradual formation of a library composed of valuable works pertaining to all departments of human knowledge.

SEC. 9. *And be it further enacted*, That of any other moneys which have accrued, or shall hereafter accrue, as interest upon the said Smithsonian fund, not herein appropriated, or not required for the purposes herein provided, the said managers are hereby authorized to make such disposal as they shall deem best suited for the promotion of the purpose of the testator, anything herein contained to the contrary notwithstanding.

SEC. 10. *And be it further enacted*, That the author or proprietor of any book, map, chart, musical composition, print, cut, or engraving, for which a copyright shall be secured under the existing acts of Congress, or those which shall hereafter be enacted respecting copyrights, shall, within three months from the publication of said book, map, chart, musical composition, print, cut, or engraving, deliver, or cause to be delivered, one copy of the same to the Librarian of the Smithsonian Institution, and one copy to the Librarian of the Congress Library, for the use of the said libraries.

SEC. 11. *And be it further enacted*, That there is reserved to Congress the right of altering, amending, adding to, or repealing any of the provisions of this act: *Provided*, That no contract, or individual right, made or acquired under such provisions, shall be thereby divested or impaired.

Approved August 10, 1846.

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AN ACT

TO ESTABLISH

THE SMITHSONIAN INSTITUTION.

REVISED STATUTES, TITLE LXXIII.

Sec.
5579. Incorporation of the Institution.
5580. Regents.
5581. Appointment of Regents.
5582. Organization of Board.
5583. Duties of Secretary.
5584. Salary and removal of Secretary, &c.
5585. Special meetings of members.
5586. Reception and arrangement of specimens and objects of art.
5587. Library.
5588. Evidence of title to site and buildings.
5589. Protection of property.
5590. Appropriation of interest.
5591. Acceptance of other sums.
5592. Disposal of unappropriated money.
5593. Disbursements.
5594. Right of repeal.

Will of James Smithson.

PREAMBLE. James Smithson, esquire, of London, in the kingdom of Great Britain, having by his last will and testament given the whole of his property to the United States of America, to found, at Washington, under the name of the "Smithsonian Institution," an establishment for the increase and diffusion of knowledge among men; and the United States having, by an act of Congress, received said property and accepted said trust; therefore, for the faithful execution of said trust, according to the will of the liberal and enlightened donor.

Incorporation of the Institution.

SEC. 5579. The President, the Vice-President, the Secretary of State, the Secretary of the Treas-

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Incorporation of the Institution.

10 Aug., 1846, c. 178, s. 1, v. 9, p. 102.
20 March, 1871, c. 1, v. 17, p. 1.

ury, the Secretary of War, the Secretary of the Navy, the Postmaster General, the Attorney General, the Chief Justice, the Commissioner of the Patent Office, and the Governor of the District of Columbia, and such other persons as they may elect honorary members, are hereby constituted an establishment, by the name of the "Smithsonian Institution," for the increase and diffusion of knowledge among men; and by that name shall be known and have perpetual succession, with the powers, limitations, and restrictions hereinafter contained, and no other.

Regents.

10 Aug., 1846, c. 178, s. 3, v. 9, p. 103.
10 Jan., 1865, c. 11, v. 13, p. 430.
20 March, 1871, c. 1, v. 17, p. 1.

SEC. 5580. The business of the Institution shall be conducted at the city of Washington by a Board of Regents, named the Regents of the Smithsonian Institution, to be composed of the Vice-President, the Chief Justice of the United States, and the Governor of the District of Columbia, three members of the Senate and three members of the House of Representatives; together with six other persons, other than members of Congress, two of whom shall be resident in the city of Washington; and the other four shall be inhabitants of some State, but no two of them of the same State.

Appointment of Regents.

10 Aug., 1846, c. 178, s. 3, v. 9, p. 103.

SEC. 5581. The Regents to be selected shall be appointed as follows: The members of the Senate by the President thereof; the members of the House by the Speaker thereof; and the six other persons by joint resolution of the Senate and House of Representatives. The members of the

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House so appointed shall serve for the term of two years; and on every alternate fourth Wednesday of December a like number shall be appointed in the same manner, to serve until the fourth Wednesday in December, in the second year succeeding their appointment. The Senators so appointed shall serve during the term for which they shall hold, without re-election, their office as Senators. Vacancies, occasioned by death, resignation, or otherwise, shall be filled as vacancies in committees are filled. The regular term of service for the other six members shall be six years; and new elections thereof shall be made by joint resolutions of Congress. Vacancies occasioned by death, resignation, or otherwise may be filled in like manner by joint resolution of Congress.

Organisation of Board.
Ibid.

SEC. 5582. The Regents shall meet in the city of Washington and elect one of their number as Chancellor, who shall be the presiding officer of the Board of Regents, and called the Chancellor of the Smithsonian Institution, and a suitable person as Secretary of the Institution, who shall also be the Secretary of the Board of Regents. The Board shall also elect three of their own body as an executive committee, and the Regents shall fix on the time for the regular meetings of the Board; and, on application of any three of the Regents to the Secretary of the Institution, it shall be his duty to appoint a special meeting of the Board of Regents, of which he shall give

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notice, by letter, to each of the members; and, at any meeting of the Board, five shall constitute a quorum to do business. Each member of the Board shall be paid his necessary traveling and other actual expenses, in attending meetings of the Board, which shall be audited by the executive committee, and recorded by the Secretary of the Board; but his service as Regent shall be gratuitous.

Duties of Secretary.

Ibid., s. 7, p. 105.

SEC. 5583. The Secretary of the Board of Regents shall take charge of the building and property of the Institution, and shall, under their direction, make a fair and accurate record of all their proceedings, to be preserved in the Institution; and shall also discharge the duties of librarian and of keeper of the museum, and may, with the consent of the Board of Regents, employ assistants.

Salary and removal of Secretary, &c.

Ibid.

SEC. 5584. The Secretary and his assistants shall, respectively, receive for their services such sum as may be allowed by the Board of Regents, to be paid semi-annually on the first day of January and July; and shall be removable by the Board of Regents whenever, in their judgment, the interests of the Institution require such removal.

Special meetings of members.

Ibid., s. 8.

SEC. 5585. The members and honorary members of the Institution may hold stated and special meetings, for the supervision of the affairs of the Institution and the advice and instruction of the Board of Regents, to be called in the manner

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provided for in the by-laws of the Institution, at which the President, and in his absence the Vice-President, shall preside.

Reception and arrangement of specimens and objects of art.
Ibid., s. 6.

SEC. 5586. Whenever suitable arrangements can be made from time to time for their reception, all objects of art and of foreign and curious research, and all objects of natural history, plants, and geological and mineralogical specimens, belonging to the United States, which may be in the city of Washington, in whosesoever custody they may be, shall be delivered to such persons as may be authorized by the Board of Regents to receive them, and shall be so arranged and classified in the building erected for the Institution as best to facilitate the examination and study of them; and whenever new specimens in natural history, geology, or mineralogy are obtained for the museum of the Institution, by exchanges of duplicate specimens, which the Regents may in their discretion make, or by donation, which they may receive, or otherwise, the Regents shall cause such new specimens to be appropriately classed and arranged. The minerals, books, manuscripts, and other property of James Smithson, which have been received by the Government of the United States, shall be preserved separate and apart from other property of the Institution.

Library.
Ibid., s. 8.

SEC. 5587. The Regents shall make, from the interest of the fund, an appropriation, not exceeding an average of twenty-five thousand

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dollars annually, for the gradual formation of a library composed of valuable works pertaining to all departments of human knowledge. [See §§ 94, 99, 100.]

Evidence of title to site and buildings.

Ibid., s. 4, p. 104.

SEC. 5588. The site and lands selected for buildings for the Smithsonian Institution shall be deemed appropriated to the Institution, and the record of the description of such site and lands, or a copy thereof, certified by the Chancellor and Secretary of the Board of Regents, shall be received as evidence in all courts of the extent and boundaries of the lands appropriated to the Institution.

Protection of property.

Ibid., s. 5.

SEC. 5589. All laws for the protection of public property in the city of Washington shall apply to, and be in force for, the protection of the lands, buildings, and other property of the Smithsonian Institution. All moneys recovered by or accruing to, the Institution shall be paid into the Treasury of the United States, to the credit of the Smithsonian bequest, and separately accounted for.

Appropriation of interest.

Ibid., s. 2, p. 102.

5 Feb., 1867, c. 34, s. 2, v. 14, p. 391.

SEC. 5590. So much of the property of James Smithson as has been received in money, and paid into the Treasury of the United States, being the sum of five hundred and forty-one thousand three hundred and seventy-nine dollars and sixty-three cents, shall be lent to the United States Treasury, at six per centum per annum interest, and six per centum interest on the trust fund and residuary legacy received into the

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United States Treasury, payable in half-yearly payments, on the first of January and July in each year, is hereby appropriated for the perpetual maintenance and support of the Smithsonian Institution; and all expenditures and appropriations to be made, from time to time, to the purposes of the Institution shall be exclusively from the accruing interest, and not from the principal of the fund. All the moneys and stocks which have been, or may hereafter be, received into the Treasury of the United States, on account of the fund bequeathed by James Smithson, are hereby pledged to refund to the Treasury of the United States the sums hereby appropriated.

Acceptance of other sums.

5 Feb., 1867, c. 24, s. 1, v. 4, p. 391.

SEC. 5591. The Secretary of the Treasury is authorized and directed to receive into the Treasury, on the same terms as the original bequest of James Smithson, such sums as the Regents may, from time to time, see fit to deposit, not exceeding, with the original bequest, the sum of one million dollars.

Disposal of unappropriated money.

10 Aug., 1846, c. 178, s. 9, v. 9, p. 105.

SEC. 5592. The Regents are authorized to make such disposal of any other moneys which have accrued, or shall hereafter accrue, as interest upon the Smithsonian fund, not herein appropriated, or not required for the purposes herein provided, as they shall deem best suited for the promotion of the purpose of the testator.

Disbursements.

Ibid., s. 8, p. 103.

SEC. 5593. Whenever money is required for the payment of the debts or performance of the

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contracts of the Institution, incurred or entered into in conformity with the provisions of this Title, or for making the purchases and executing the objects authorized by this Title, the Board of Regents, or the executive committee thereof, may certify to the Chancellor and Secretary of the Board that such sum of money is required, whereupon they shall examine the same, and, if they shall approve thereof, shall certify the same to the proper officer of the Treasury for payment. The Board shall submit to Congress, at each session thereof, a report of the operations, expenditures, and condition of the Institution.

Right of repeal.

Ibid., s. 11, p. 106.

SEC. 5594. Congress may alter, amend, add to, or repeal any of the provisions of this Title; but no contract or individual right made or acquired under such provisions shall be thereby divested or impaired.

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BY-LAWS OF THE SMITHSONIAN INSTITUTION.

[ADOPTED *May* 17, 1853.]

See Smithsonian Report for 1854, page 98.

SECTION 1. A stated annual meeting of the statute and honorary members of the Institution shall be held at the hall of the Institution, in Washington, on the first Tuesday in May. Adjourned meetings may be held at such place and time as the members of the Institution at any meeting may order. Special meetings will be convened by direction of the President of the United States.

SECTION 2. Notice of all meetings of the Institution, whether stated, adjourned, or special, shall be given by the Secretary in writing, addressed to each member.

SECTION 3. The votes and proceedings of the Institution, with the names of the members present at each meeting, shall be recorded; and at the opening of every meeting the journal of the preceding meeting shall be read by the Secretary.

SECTION 4. A quorum of not less than six of the statute members shall be requisite for the transaction of any business except adjourning or obtaining the attendance of members.

SECTION 5. The Secretary shall, at the stated annual meeting, make a general statement of the condition and affairs of the Institution during the past year.

SECTION 6. Honorary members, not exceeding one in each year, shall be elected by ballot, and by unanimous vote of the statute members: *Provided*, That no person shall be chosen without having been nominated at a previous meeting of the Institution.

SECTION 7. The rules of parliamentary proceedings, as received and practiced in the Senate of the United States, shall govern the meetings of the Institution in all cases which are not inconsistent with the foregoing by-laws.

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THE "ESTABLISHMENT"

OF THE SMITHSONIAN INSTITUTION.

Section 5579 of the Revised Statutes of the United States provides that "The President, the Vice-President, the Secretary of State, the Secretary of the Treasury, the Secretary of War, the Secretary of the Navy, the Postmaster General, the Attorney General, the Chief Justice, the Commissioner of the [*Patent Office*] [Patents], and the Governor of the District of Columbia, and such other persons as they may elect honorary members, are hereby constituted an Establishment, by the name of the 'Smithsonian Institution,' for the increaseand diffusion of knowledge among men; and by that name shall be known and have perpetual succession, with the powers, limitations, and restrictions hereinafter contained, and no other."

Section 5585 provides that "The members and honorary members of the Institution may hold stated and special meetings for the supervision of the affairs of the Institution, and the advice and instruction of the Board of Regents, to be called in the manner provided for in the by-laws of the Institution, at which the President, and in his absence the Vice-President, shall preside."

JOURNAL OF PROCEEDINGS OF THE ESTABLISHMENT.

WASHINGTON, *August* 1, 1849.

A meeting of the Establishment of the Smithsonian Institution was held this day, at 5 o'clock p. m., in the eastern range of the Smithsonian building.

Present: Zachary Taylor, President of the United States, and *ex officio* President of the Institution; John M. Clayton, Secretary of State; Wm. M. Meredith, Secretary of the Treasury; Jacob Collamer, Postmaster General; Thomas Ewbank, Commissioner of Patents; W. W. Seaton, Mayor of Washington; Joseph Henry, Secretary of the Smithsonian Institution.

The President took the chair.

This being the first meeting of the Establishment, the Secretary gave an account of the Institution, of the plan of organization adopted by the Board of Regents, and of the progress made in carrying the several parts into operation.

The chairman of the Executive Committee gave to the meeting an account of the disbursements of the Institution and the state of its funds.

The following gentlemen having been recommended by the Regents and officers of the Institution, and being duly considered by this meeting, were, on motion of Mr. Meredith, unanimously elected honorary members of the Smithsonian Institution, viz: Dr. Robert Hare, of Philadelphia; Albert Gallatin, of New York; Dr. Benjamin Silliman, of Connecticut; Washington Irving, of New York.

On motion of Mr. Clayton, it was—

Resolved, That a committee of three be appointed to draft and report by-laws and regulations for the future meetings of the Establishment.

Whereupon, the President appointed Mr. Clayton, Mr. Meredith, and Mr. Seaton, the committee.

On motion of Mr. Collamer, the Secretary of the Institution was added to the said committee.

On motion, the meeting then adjourned, to meet again on the call of the President.

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WASHINGTON, *May* 8, 1853.

A meeting of the Smithsonian Institution, called by order of the President of the United States, was held this day, May 8, 1853, in the session-hall of the Smithsonian building, at 11 o'clock a. m.

Present: Franklin Pierce, President of the United States, *ex officio* President of the Smithsonian Institution; James Guthrie, Secretary of the Treasury; James C. Dobbin, Secretary of the Navy; James Campbell, Postmaster General; Caleb Cushing, Attorney General; John W. Maury, Mayor of Washington; Joseph Henry, Secretary of the Smithsonian Institution.

The Secretary gave an account of the operations of the Institution.

Less than half of the number of members being present, the meeting adjourned to meet on Tuesday, the 17th instant.

WASHINGTON, *May* 17, 1853.

An adjourned meeting of the Smithsonian Institution was held this day in the session-hall of the Smithsonian building.

Present: Franklin Pierce, President of the United States; William L. Marcy, Secretary of State; James Guthrie, Secretary of the Treasury; Jefferson Davis, Secretary of War; James C. Dobbin, Secretary of the Navy; James Campbell, Postmaster General; Caleb Cushing, Attorney General; Charles Mason, Commissioner of Patents: John W. Maury, Mayor of Washington; Joseph Henry, Secretary of the Smithsonian Institution.

The President took the chair, and the minutes of the preceding meeting were read.

On motion, the President appointed a committee of five to draft a code of by-laws. The committee consisted of the following persons, to wit: Messrs. Cushing, Dobbin, Maury, Davis, and the Secretary.

The committee after due deliberation, reported through their chairman, Mr. Cushing, a code of by-laws. [To be found on page 769.]

On motion, the report of the committee was adopted.

The Secretary presented an account of the organization and operations of the Institution relative to the reception and publication of memoirs, researches, exchanges, the formation of catalogues of libraries; also, an account of the state of the funds, and the policy with regard to the formation of collections, &c.

On motion of Mr. Davis, nominations were then received for the appointment of an honorary member of the Institution, to take place at a succeeding meeting.

On motion, the Institution adjourned to the first Monday in June ensuing, at 11 o'clock a. m.

WASHINGTON, *June* 6, 1853.

An adjourned meeting of the Smithsonian Institution was held this day, June 6, 1853, in the session-hall of the Smithsonian building.

Present: Franklin Pierce, President of the United States, *ex officio* President of the Smithsonian Institution; James Guthrie, Secretary of the Treasury; William L. Marcy, Secretary of State; Jefferson Davis, Secretary of War; James Campbell, Postmaster General; Caleb Cushing, Attorney General; Charles Mason, Commissioner of Patents; Joseph Henry, Secretary of the Smithsonian Institution.

The President took the chair, and the minutes of the preceding meeting were read.

On motion, the Institution proceeded to ballot for the election of an honorary member.

Professor Parker Cleaveland was declared unanimously elected.

The advertisement of the Leopoldin Caroline Academy of Germany, relative to the Smithsonian Institution, was read by the Secretary.

The Institution then adjourned *sine die*.

WASHINGTON, *May* 2, 1854.

The stated annual meeting of the Smithsonian Institution was held this day, May 2, 1854, at the hall of the Institution, at 12 o'clock m.

Present: Franklin Pierce, President of the United States; Hon. Wm. L. Marcy, Secretary of State; Hon. James Guthrie, Secretary of the Treasury; Hon. Jefferson Davis, Secretary of War; Hon. James C. Dobbin, Secretary of the Navy; Hon. Caleb Cushing, Attorney General; Hon. John W. Maury, Mayor of the city; Professor Robert Hare, honorary member; Professor Joseph Henry, Secretary of the Institution.

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The President took the chair.

The minutes of the last annual meeting were read and approved.

On motion of Hon. Mr. Guthrie, the Institution proceeded to nominate candidates for election as honorary members.

Dr. Hare made some remarks respecting his apparatus, and the conditions on which it was presented to the Institution.

The Secretary explained the cause of the delay in completing the repairs, and in the proposed exhibition of the apparatus. This had been mainly due to an accident which happened to the building. A part of the interior gave way, and the Regents directed that the whole wood work of the main building should be removed, and its place supplied with fire-proof materials. To meet the additional expense of this necessary change in the plan, the time of completing the edifice was extended, and funds which would have been devoted to other purposes were consequently given to this object. The building will, however, be completed in the course of the present year; a spacious room is now nearly ready to receive the apparatus, and due diligence on the part of the Institution will be made to finish the repairs of the articles, of which a considerable portion are now completed.

On motion, the Institution then adjourned to the first Tuesday in June next, (6th proximo.)

WASHINGTON, *June* 6, 1854.

An adjourned meeting of the Smithsonian Institution was held this day, June 6, 1854, in the hall of the Institution, at 12 o'clock m.

Present: Hon. William L. Marcy, Secretary of State; Hon. James Guthrie, Secretary of the Treasury; Hon. Caleb Cushing, Attorney General; Hon. Charles Mason, Commissioner of Patents; Professor Joseph Henry, Secretary of the Institution.

There not being a legal quorum present, on motion of Mr. Cushing, the Institution adjourned to meet on Saturday, July 15, 1854, at 12 o'clock m.

WASHINGTON, *July* 15, 1854.

An adjourned meeting of the Smithsonian Institution was held this day July 15, 1854, in the hall of the Institution, at 12 o'clock m.

Present: Franklin Pierce, President of the United States; Hon. William L. Marcy, Secretary of State; Hon. James Guthrie, Secretary of the Treasury; Hon. Jefferson Davis, Secretary of War; Hon. James C. Dobbin, Secretary of the Navy; Hon. James Campbell, Postmaster General; Hon. Caleb Cushing, Attorney General; Hon. Charles Mason, Commissioner of Patents.

The President took the chair. The minutes of the last meeting were read and approved.

The nominations previously made for honorary members were then read, and the Institution proceeded to ballot, but no choice was made.

On the second ballot no choice was made.

On motion, the election of an honorary member was postponed.

Ordered, That three persons be appointed a committee of the Institution to confer with the Board of Regents as to suitable means of communication between the two bodies, and to report thereon at a subsequent meeting of the Institution.

The Secretary gave a general account of the affairs of the Institution; the condition of the building; the operations carried on during the past year; and a statement of the finances at the present time.

The President appointed Messrs. Cushing, Davis, and Mason, as the committee of conference with the Board of Regents.*

On motion of Mr. Campbell, the Institution adjourned to meet on the third Saturday (21st) of October next. This meeting was not held.

[A meeting was subsequently held, at which A. B. Longstreet, of Mississippi, and the Secretary of the Interior were elected honorary members, but no record of proceedings has been found.]

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* The report of this committee is given on page 120. It was adopted by the Board of Regents, but not presented to the Establishment.

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WASHINGTON, *June* 4, 1873.

A meeting of the Establishment was held in the Regents' room at 8½ oclock. Present, the President of the United States, Hon. U. S. Grant; the Secretary of State, Hon. Hamilton Fish; the Secretary of the Treasury, Hon. G. S. Boutwell; the Secretary of the Navy, Hon. G. M. Robeson; the Postmaster General, Hon. J. A. J. Creswell; the Secretary of the Interior, Hon. C. Delano; the Attorney General, Hon. G. H. Williams; the Commissioner of Patents, Hon. M. D. Leggett, and Professor Henry, Secretary of the Institution.

The minutes of the previous meeting were read.

The Secretary gave an account of the state of the funds, explained the will of Smithson, and described the organization of the Smithsonian Institution and its plan of operations, and what it had done in the way of meteorology, explorations, exchanges, &c.

The Secretary of the Navy proposed Hon. C. Delano as an honorary member of the Establishment, and he was duly elected.

On motion, the Establishment adjourned, to meet on the third Wednesday in November.

After adjournment the Establishment inspected the building, the museum, exchange room, offices, &c.

WASHINGTON, *May* 5, 1877.

A meeting of the "Establishment of the Smithsonian Institution" was held on the 5th May, 1877, in pursuance of the call of the President of the United States, in the Smithsonian building, (office of the Secretary,) at 4 o'clock P. M.

Present, the President of the United States, Hon. R. B. Hayes; the Secretary of State, Hon. W. M. Evarts; the Secretary of War, Hon. G. W. McCrary; the Secretary of the Interior, Hon. C. Schurz; the Secretary of the Treasury, Hon. J. Sherman; the Postmaster General, Hon. D. M. Key, and Professor Henry, Secretary of the Institution.

The minutes of the last meeting (June 4, 1873) were read; also the law of organization of the Institution relative to the Establishment.

The Secretary gave an account of the operations and condition of the Institution, its plan of organization, finances, requirements of Congress, &c.

On motion of Mr. Sherman the Establishment adjourned, to meet at the call of the President.

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EXAMINATION OF PROFESSOR HENRY BY THE ENGLISH GOVERNMENT SCIENTIFIC COMMISSION.

No. 6 Old Palace Yard,
Westminster, Tuesday, 28*th June*, 1870.

Present: His Grace the Duke of Devonshire, K. G., in the chair; The Most Hon. The Marquis of Lansdowne; Sir John Lubbock, Bart., M. P., F. R. S.; Sir James Phillips Kay Shuttleworth, Bart.; Bernhard Samuelson, Esq., M. P.; William Sharpey, Esq., M. D., Sec. R. S.; Thomas Henry Huxley, Esq., LL. D., F. R. S.; William Allen Miller, Esq., M. D., LL. D., Treas. R. S.; George Gabriel Stokes, Esq., M. A., LL. D., Sec. R. S.

Professor Joseph Henry examined.

1403. (*Chairman.*) I believe you are the Secretary of the Smithsonian Institution in Washington?—I am.

1404. You have also previously been a professor in some college in the United States?—I was a professor for many years in the College of Princeton, in New Jersey.

1405. Have you any other appointment?—I am a member of the Lighthouse Board of the United States.

1406. Have you any appointment directly in connection with instruction in science?—No.

1407. (*Dr. Miller.*) You are the Director of the Smithsonian Institution, and perhaps you will be kind enough to give the Commission a general idea of what the objects of that Institution are?—I must thank the Commission for the honor they have done me in asking me to appear before them. The Institution was founded by James Smithson, of England, a member of the Royal Society, who, after devoting his life to scientific pursuits, left his fortune to the United States to found, at Washington, an establishment, under the name of the Smithsonian Institution, for the increase and diffusion of knowledge among men. The original bequest was $541,000, which, by savings and by judicious investments, has been increased to $700,000. From the income of this sum, at six per cent. per annum, the Institution is supported. There was at first a great diversity of opinion as to the manner in which the income should be applied to realize the design of the testator, as expressed in the brief, but comprehensive terms of the bequest. The distinction at that time between an institution for the ad-

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vancement of knowledge, by the discovery of new truths, and one for the teaching of the knowledge already in existence, was not so generally recognized as it is at present, and Congress, after several years of delay, placed the expenditure of the income under the care of a Board of Regents, and directed that they should make provision, by the erection of a building and otherwise, for the formation of a library, a museum, and a gallery. It also gave fifty acres of unimproved ground, surrounding the site for the building, with indications that it should be planted with trees. Afterwards, however, though not without much opposition, it was concluded by the directors that those objects, although very important in themselves, were too local in their influence to come up to the liberal spirit of the bequest, which was intended not merely to benefit the citizens of Washington, nor even exclusively those of the United States, but mankind in general; and that the efforts of the directors should be to induce Congress to make a separate appropriation, from the public treasury, for the support of the objects just mentioned, and to devote, as far as possible, the income of the Smithsonian fund to the direct increase and diffusion of knowledge, by promoting original researches, and by distributing accounts of the results of these to every part of the civilized world. In this the directors have been in a great measure successful, though time and much persevering labor have been required to produce a change in the policy originally contemplated. A large portion of the income of the funds has been expended on the building. A library, principally consisting of nearly a full series of the proceedings and transactions of the existing learned societies of the world, has been accumulated, the expense of the care of which has absorbed another portion of the income; a museum has been collected, consisting principally of specimens to illustrate the natural history and ethnology of America, and also a collection of engravings and plaster casts to meet the original requirements of Congress as to a gallery of art; but experience has abundantly proved that any one of the specified objects, if properly sustained, would soon absorb all the income of the bequest, and vindicated the policy of transferring the support of them to other funds. In accordance with this, Congress was first induced to take charge of the grounds and take the steps necessary for their improvement. It next took charge of the books which had been collected, and incorporated them with the national library, giving the Institution and its collaborators the free use of the books of both

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collections. By this transfer the Institution is saved in the expense of binding, cataloguing, and attendance, nearly $10,000 annually, while it has the same use of its books as before the arrangement was made. Again, the Agricultural Department has taken charge of the plants of the Institution, and the osteological specimens have been transferred to the Army Medical Museum. Furthermore, a wealthy citizen of Washington has made a large appropriation of money to establish and support a gallery of art, and it is proposed to transfer to this the articles which the Institution has accumulated in the line of art. The object of this policy is to establish at Washington a collection of objects of nature and art, without trenching on the Smithsonian fund, which shall be worthy the capital of the nation. As a step towards this desirable end, Congress, at its present session, has appropriated $10,000 towards the support of the museum, under the care of the Institution, and also $10,000 for the commencement of the fitting up of the upper story of the Smithson building for the better display of the collections. The $10,000 for the care of the museum will for the present be an annual appropriation.

In regard to the increasing of knowledge by means of original research, it should be observed that the will makes no distinction as to any kind of knowledge, and here all branches are entitled to a share of attention, that is, all branches which can be said to be capable of definite increase; but these are proverbially scientific branches, and therefore the appropriations from the income of the bequest have thus far been devoted to the advancement of scientific subjects. The plan adopted for the application of the income of the bequest to what has been denominated the active operations, in contradistinction to the plan of the museum, library, &c., consists principally in assisting men of science in their labors, in instituting various series of observations or experiments and explorations; in publishing the results of these; and in distributing copies to all the principal libraries of the world. Whenever a man is found who is capable of adding to the sum of human knowledge, he is assisted, it may be, with instruments, books, specimens, &c.; or, if he is in the line of mathematics, in its application to physics or astronomy, in which arithmetical calculations are required, an appropriation is made for defraying the expenses of these. The Institution also makes large collections of specimens in all branches of natural history, not merely to supply the museum under its care, but for distribution to advance this branch of knowl-

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edge; wherever anyone is engaged in a special line of investigation and requires specimens to aid him, the Institution undertakes to supply them, and the only return asked is that full credit be given to the name of Smithson for the assistance afforded. The Institution has established a series of magnetic observations and a system of meteorology, the latter of which has now been in operation for twenty years. It includes observations on the temperature, the pressure, and the moisture of the air, the winds, storms, and rainfall. The records of these observations have been placed in the hands of computers, and are now being reduced and discussed, with a view to publication. I have here two maps showing the result of all the observations on the rainfall which have been made in the United States. The Institution has made many explorations in regard to the ethnology of America; has collected a large number of Indian vocabularies; and published grammars and dictionaries of several languages. The results of all these are published for distribution in a quarto form, denominated Smithsonian Contributions to Knowledge. In this way the Institution has done a great deal of good, and I hold in my hand a list, numbering 1,568, of the foreign correspondents of the Institution to which those memoirs are sent.

1408. About how much is the annual income of the institution?—It is now about $42,000.

1409. And is that distributed specially for the advancement of science, or is it told off to any particular branches of science?—The Institution, up to the present time, has been obliged to devote a portion of its annual income to the museum and the construction and repair of the building. The remainder has been appropriated to researches, to explorations, to meteorology, and to the system of international exchanges, and to publications.

1410. The institution is under the government of a body of regents, is it not?—Yes.

1411. Will you explain how this body is appointed, and of whom, and of how many members it consists?—The body is appointed by Congress. There are three members of the House appointed for the time that they are elected to Congress, that is, two years; and three members of the Senate, also appointed during the time they are in the Senate, that is, for six years. Then there are six citizens at large, gentlemen of influence, and three *ex officios*, the Vice-President of the United States, the Mayor of Washington, and the Chief Justice of the United States—the last of whom is the only person that is in for life; all the others are con-

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stantly changing, and they are not necessarily men of science.

1412. Are they re-eligible?—Yes, they are; and they are generally re-appointed from time to time as their terms of office expire.

1413. How often does the body meet?—It meets once a year for one session, which continues at intervals for several weeks; and then the Secretary makes a report of all that has been done during the year, and of the state of the funds, and recommends certain appropriations to be made for the next year. Those appropriations are generally made, and the Institution goes on again to the end of the next year.

1414. What is the staff of the Institution for working it?—The essential staff consists of the Secretary, an Assistant Secretary, and a number of clerks, and laborers. The Assistant Secretary has charge of the collections of natural history, and the papers are referred to collaborateurs. We have lists of scientific men, and if a person applies for assistance, or if a paper is presented for publication, it is referred to a commission of men eminent in the line to which the paper refers. If the report is favorable their names are published, as you see on the reverse of the title of that paper before you, as vouchers for its importance; if the report is not favorable, the paper is returned to the author, and very frequently it undergoes a discussion between the examiners and the author. This discussion is carried on through the Institution, and as far as possible, the name of the author of the paper is kept concealed, and in all cases the names of those who examine it are not known.

1415. Is this Commission a standing body?—No.

1416. How is it appointed?—It is appointed by the Secretary.

1417. The members are not necessarily residents in Washington?—No, they may reside in any part of the country, or even in any part of the world. Several papers have been referred to scientific men in London.

1418. I think we understand you to say that a large portion of the revenue of the Institution is devoted to the furtherance of research?—Yes, that is so.

1418. Supposing that a person is desirous of being aided by the Institution, how does he make his case known?—He applies to the Institution, and if confidence can be placed in him, the appropriation is made. I may give you an example. There is a mathematician, now engaged in

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discussing the orbit of Uranus. Two or three years ago he made an investigation of the orbit of Neptune, which was published by the Institution and has been adopted as the basis of the calculations with regard to that planet, I believe, by the computers of all the nautical almanacs. That paper involved a large amount of arithmetical computation, and those computations were paid for by the Institution. Now, the same person is engaged on the planet Uranus, one of his objects being to determine whether or not the perturbations of that planet can be accounted for by the action of the planet Neptune, with a view of ascertaining whether there are outstanding disturbances which would indicate another planet still beyond. This investigation also requires arithmetical computations, which will also be paid for by the Institution.

1420. The applications are made by the individuals to the Secretary; does it rest very much with the Secretary to decide upon granting them?—Yes, but he only decides after consulting with the collaborateurs of the Institution, and he must have a general knowledge of science and be imbued with its spirit.

1421. Do you find that you can expend year by year that sum which is placed at your disposal in such a way as to give you satisfaction?—A great deal more could be expended if it were available, and it is for that object that we are endeavoring to be relieved of the expense of sustaining the museum and other objects. During the past year we have given 20,000 specimens of plants to the Agricultural Department, on condition that a botanist, nominated by the Institution, is appointed to take care of the specimens, so that they may be always accessible for scientific or educational purposes; in fact, that the Institution is to have all the use of them that it would have if they were in its building. That saves the Institution perhaps $3,000 a year; and the transfer of the care of the books to the Library of Congress, as I have already said, has saved the Institution $10,000 a year.

1422. Do you consider yourselves limited to American men of science?—Not entirely, but seeing that the bequest was given to the United States, and that there is a great want of it there, we incline to give our countrymen the preference. But much is done in assisting the researches of foreign naturalists, by furnishing them with specimens, and in publishing such of their researches as may be connected with America: for example, the Institution has published a work on the American Algæ, by the late Dr.

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Harvey, of Dublin, and also several works on insects, by De Saussure, of Geneva, and Leou, a German naturalist.

The Institution endeavors in all cases to occupy ground untenanted by other Institutions, and whenever any other establishment will take up a line of research we immediately relinquish it and enter upon a new field: for example, a few years ago a report on forest trees was commenced, and collections of all the different specimens of the forest trees of the country for this purpose were made; and this having become very expensive, has now been turned over to the Agricultural Department, which will get an appropriation from Congress for it, and the work will be done, while the money of Smithson is saved for other purposes.

1423. What does the building itself represent?—Externally a Norman castle, and it has cost a very large sum. Unfortunately, architecture is frequently in antagonism with science, and, too often, when an architect gets his hand into the purse of an establishment, everything else must stand aside. Much trouble has resulted from this building; it has been a source of constant anxiety and expense, the cost having greatly exceeded the original estimate.

1424. What was the original object of the building?—It was intended to accommodate a library, a museum, and a gallery of art; but, inasmuch as the Institution has turned over the library and the gallery of art to other establishments, the building will now be devoted entirely to the museum. The upper part of it was burnt, and it remains unfinished; and if Congress would accept the building as a gift, allowing one of the wings for the use of the Institution, and devoting the main portion to the museum, it would be a gain to the Institution.

Independent of the building, the Institution has a capital of $700,000 now, so that the financial condition of it is very favorable. The friends of the Institution are very sensitive with regard to its reputation, and are fully aware of the responsibility incurred by accepting the trust. The bequest came from England, and it is felt that the intelligence and integrity of the Government of the United States are in some degree involved in the manner in which this bequest is administered, and there is a desire to administer it for the benefit of mankind, through the advance of science. Its importance, as an example, can scarcely be over-estimated: there are in the United States a great many men

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who have suddenly made wealth, and are desirous of distinguishing themselves, and they have, in several cases, founded schools and universities, but it has not yet become fashionable, although I think it will be in time, to found establishments for the advance of science. Professor Bache, with whose name the Commission are no doubt acquainted, left his small fortune of about $50,000 to carry out the same idea as that indicated in the will of Smithson. He was one of the Regents of the Institution, and was so impressed with the importance of the advance of science that he left his property for making original research, and for publishing results; and no man can have a prouder monument, I think, than such an one as Smithson and Bache have erected for themselves. Every year the Smithsonian Institution publishes a volume of transactions entitled "Smithsonian Contributions to Knowledge," and these volumes are distributed in whole or in part to every first-class library on the face of the earth, carrying with them the name of the founder, and constantly reproducing it, not in one part only, but in every part of the world.

1425. Do you spend any large portion of your revenues in the collection of meteorological observations?—Perhaps $2,000 or $3,000 a year, and we are endeavoring to get that placed under Government also.

1426. Are those observations founded by you, or in what way do you favor them?—The observations are voluntary. We furnish the observers with instruments in some cases. We did at first furnish them altogether with instruments, but this has been discontinued, except with respect to the rain gauges, and during the last year we have distributed about 500 of these.

There is one part of the operations which I have not sufficiently dwelt upon, and that is the system of international exchanges. In order to send the volumes of Smithsonian Contributions over the world the Institution has agents; an agent in this city, an agent in Paris, an agent in Leipsic, an agent in Amsterdam, and another in Norway; and every year the volumes of the Institution are sent to these agents for distribution, and with them the transactions and proceedings of all the societies of the United States, and also of Canada, and of South America. For example, all the Canadian institutions send copies of their publications to the Institution, and then the Institution distributes them over the world, and receives in return for the several donors the proceedings and transactions of foreign societies. This part of the operations costs about £1,000 sterling a year, but

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it is considered of great importance in the way of making science one in all countries. This is considered a very important part of the plan of operations. Not only are books distributed, but the Institution has commenced the practice of distributing specimens of natural history over the world and getting others in exchange. As an interesting fact in connection with this system, I may mention that all the lines of steamers, the Cunard line of steamers, the German Lloyds' steamers, and the lines from San Francisco, all convey the Smithsonian packages free of cost, and also that they are admitted through all custom-houses without being opened, and free from all duties in all countries.

1427. (*Dr. Sharpey.*) Do you receive for the societies in America, for example, from the societies in London, and distribute those exchanges to the societies in America?—Yes, for all the societies. The great object is to facilitate in every possible way the promotion of science, and especially the fostering of original research, and enlarging the bounds of human thought. It is a matter of surprise that the idea is not more generally understood by statesmen and legislators, that modern civilization depends upon science, including the knowledge of the forces of nature, and the modes in which they become the agents of man. Every discovery is connected with good. Even the human body cannot be properly understood without a knowledge of that of all other organized beings.

1428. (*Sir J. Lubbock.*) Is there in America any general inspection of primary schools corresponding to that which we have in this country?—In the different States there are primary schools and inspectors.

1429. Are they inspected by State inspectors?—Yes.

1430. But not by general inspectors?—The several States are considered as sovereign kingdoms, as it were. Each regulates its own code of instruction, and makes provision through its legislature for the support of schools.

1431. Do the States generally have any general inspection of those schools?—Most of the States have a school superintendent, as he is called, and he inspects the schools.

1432. Can you tell the Commission to what subjects the examination refers at those inspections?—They are reading, writing, arithmetic, geography, grammar; the ordinary elementary branches.

1433. Then it includes in fact some little elementary science?—No other, I think, than geography. The teachers may lecture on other subjects.

1434. But the inspection, you think, does not include

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that?—I think not in most cases. Then there are higher schools in the cities, and technical schools. Congress, a few years ago, devoted a certain number of lots of land from the public domain to found in each State an agricultural college, and this land was sold, and the proceeds applied to found and support those colleges.

1435. Are there any State scholarships in science which are open to students in those schools?—No.

1436. Nor, I presume, any national scholarships?—No.

1437. Are there no national examinations of science in America corresponding to those which we have in connection with the Science and Art Department in this country?—Not that I know of. This would all belong to the States.

1438. Do the States vote any sums for original scientific research?—Yes; almost every State has made an appropriation for geological investigation.

1439. Is that with reference to the geological survey, or with reference to independent geological research?—For geological survey generally; and the General Government makes almost every year an appropriation for the same purpose.

1440. In what way are the expenses of the geological survey divided between the State governments and the General Government of the United States?—The General Government makes appropriations for the survey of the public domain; that is, of the land that belongs to the United States which has not been yet formed into States.

1441. As soon as any Territory is formed into a State, the geological survey, if I understand you rightly, falls under the supervision of that State, and is not carried on by the General Government?—That is so.

1442. Independently of the geological survey, are there any sums voted for original scientific research?—No other than those connected with the geological survey, and the survey of the coast of the United States.

1443. Simply those that have direct practical utility?—Yes, and there is a small sum generally every year voted for experiments for light-houses, and the several kinds of lighting material, improvements in lamps and lenses, fog signals, and so on; and I may also mention the appropriation of an annual sum for the maintenance of a National Observatory, which is under the direction of the Navy Department.

1444. Then there is no annual sum put aside by the General Government of the United States, corresponding to the

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sum voted by the English House of Commons, and distributed by the Royal Society?—None; there is no fund of that kind.

1445. Could you favor the Commission with the whole amount of the sums spent in America, either by the General Government or by the State governments, for scientific objects, for comparison with that which we spend in this country?—I should think, including that for the Coast Survey and other surveys, and also the Observatory, $500,000 a year. A resolution has just passed the one House appropriating $100,000 to Arctic exploration, but I am not certain that it will pass the other House. Just at present Congress is very stringent in its appropriations, on account of the finance of the country; but there is an increasing tendency to favor scientific investigations.

1446. Have you no materials with you from which you might give us any account of the sum voted, or the manner in which it is distributed?—No, but I might obtain it if the Commission wished to have it.

1447. Are there in America any professorships corresponding to the Regius professorships in the universities of this country: professorships which are supported by the General Government, and sums voted by the House of Commons?—In some of the States, the universities—for instance the University of Virginia—are supported by the State, but most of the colleges in the United States are supported by endowments which they have received from individuals of various sects, and they are generally sectarian, and the endowments have been raised by the church.

1448. Does the United States Government give any assistance to scientific societies in America, either by providing them with a house or in any other manner?—No, it does not. The great demand in the United States is for applied science, not theoretical science.

1449. (*Mr. Samuelson.*) I think you stated that a large grant of land was made by the Congress of the United States for the establishment of agricultural colleges. That grant of land was made, was it not, during the American troubles?—Yes, it was.

1450. That was a grant of land which was valued, was it not, at between $30,000,000 and $40,000,000?—I do not know the exact value of the land. It was, however, very large.

1451. You stated that it was applied to the establishment of agricultural colleges, but was it not voted for the estab-

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lishment of technical schools of various kinds?—I think it was for agricultural colleges.

1452. At any rate, hitherto it has been appropriated to agricultural colleges, whatever the intention of the vote may have been?—Yes, I think that is the case.

1453. You have stated that the United States Government is not in the habit of making large grants for the purposes of investigation, and that it does not give any great support, if any support, to the universities, but you stated also, did you not, that universities are founded and supported by some of the individual States?—Yes; but I should state that the General Government does support two important schools, in both of which scientific education is predominant. These are the Military Academy at West Point and the Naval Academy at Annapolis.

1454. Can you give the Commission any more detail upon the subject of the sustenance which is given to the colleges by the States; take for instance the State of Massachusetts? —I am not able to do so. I have not paid special attention to the details. The General Government has within the last two years appointed a Commissioner of Education, whose duty it is to collect statistics on the subject and to prepare a report upon the education of the various States.

1455. But beyond that the scientific education is left in the hands of the States?—Yes.

1456. You have stated that in the primary schools of most of the States no instruction in science is given except in geography, but you have a system, have you not, of graded schools?—Yes, in certain States. I believe in Pennsylvania the pupils begin with the primary school, and they advance to a high school, and, I think, from that to the University of Pennsylvania.

1457. Could you state what amount of scientific instruction is given in the secondary schools of the different States? —I should think it was very small, but I do not know.

1458. And with respect to the universities, have you any knowledge of the amount and the quality of the scientific instruction which is given in them; take, for instance, Harvard College and the Cornell University?—Harvard University gives a very thorough course, and affords the means of instruction to resident graduates. It has lectures on physics, chemistry, and natural history, and there is a scientific school connected with Harvard University. The Cornell University is a new establishment, and is yet undeveloped.

1459. At the Harvard University is the attendance at the

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scientific courses obligatory, or is it voluntary on the part of the students?—It is obligatory. Perhaps there may be some courses that are not, but the pupils are obliged to be examined in chemistry and natural philosophy, and, I think, in natural history, in order to obtain degrees.

1460. Even those who wish to take a degree in arts would be examined in science?—Yes.

1461. (*Dr. Sharpey.*) Besides the geological surveys there are other scientific surveys, are there not, undertaken by the United States Government, such as the Coast Survey?—Yes, that is a very large establishment, and a very important one.

1462. And a very large amount of natural history knowledge is obtained in that way, is it not?—Yes, that which pertains to the sea. Many investigations with regard to the gulf stream have been made, and soundings are now in progress in it, under the direction of Professor Peirce, the Superintendent of the Survey.

1463. And also observations and collections in marine zoology?—Yes.

1464. Those are conducted of course by competent scientific men?—Yes.

1465. Who directs or advises with the Government in appointing those gentlemen?—The appointments are made really by the Director of the Survey, nominally by the Secretary of the Treasury; the Director of the Survey nominates the officer whom he considers a proper man, and he is appointed.

1466. I think you mentioned that the aid given by the Smithsonian Institution for the advancement of science and for scientific research, is to individuals, in the way of costly apparatus or appliances, expense of computation, and the like, and assistance of various kinds?—Yes. The idea at first was to appoint professors and to support them, but the difficulty is to get men who can undertake original research; They are not obtained to order. Like poets, they must be born, not made.

1467. That is to say, men who spontaneously undertake researches would apply to you, and then you give them such assistance as you deem requisite to enable them to carry on their research?—Yes.

1468. There is no attempt then made to create an institution or institutions for the direct advancement of science, for instance, great laboratories, in which scientific men would be invited to undertake researches?—Before the fire

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we had a laboratory and a large collection of physical instruments open to any one.

1469. Did anyone take advantage of them?—Yes, many investigations were made, especially for the Government. Frequently the Government requires scientific information, and that has in many cases been obtained from investigations carried on in the Institution.

1470. Do the scientific societies in America receive either from the central government or from the governments of the different States, any aid towards the expense of their publications?—No, not generally; they do in certain cases where investigations have been made. There is a book just now published by the State, namely, "The Shells of Massachusetts." There has been a good deal done in that way in certain parts of the United States, and in Massachusetts especially.

1471. Of course, none know better than you that many of those publications which are illustrated in colors are very expensive?—Yes.

1472. And rather more so than some societies could undertake from their own resources?—Yes.

1473. In such a case does the Government aid them?—No, not generally.

1474. Would you approve of such aid?—Yes, very much; and I think that the Government will in time see the importance of such aid.

1475. The Smithsonian Institution reserves its funds for its own publications, does it not?—Principally the publishing of those things which cannot be published otherwise. If they can be published in the transactions of any of the societies, the Institution does not publish them.

1476. It does not, in short, take the work of other societies?—It does not; co-operation, and not monopoly, is the motto.

1477. Could you make any suggestion by which the interchange and intercommunication of scientific knowledge, by means of papers and in other ways, could be facilitated over the world still more?—I think that the plan now adopted by the Institution is a very good one.

1478. I mean that through the post offices facilities might be afforded?—Yes, that would be a more rapid means. Our exchanges are about twice a year.

1479. Is not once a year, or even twice a year, rather a long interval for the communication of scientific knowledge as science is now going on?—It is; and for all small papers

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we are now taking advantage of the new postal regulations between this country and America.

1480. (*Professor Huxley.*) I think I understood from your enumeration of the body of regents that the great scientific bodies of the States, like the American Academy and the Academy of Natural Science in Philadelphia, are not represented *ex officio ?*—No.

1481. Do you think it would be any improvement if the scientific element, if I may so call it, were more largely represented in your Board of Regents ?—That is a difficult question for me to answer. There might be some difference of opinion as to the amount of appropriation for different branches.

1482. Of course in your official connection in the Smithsonian Institution it might be difficult for you to answer that question as you would wish ?—Precisely so; the Institution has the co-operation of all those establishments, and in no case has there been any refusal on the part of their members to examine papers.

1483. I presume that you can hardly call the governing body of the Smithsonian Institution a scientific body ?—No.

1484. Under those circumstances, I presume, that practically very considerable power is left in the hands of the Secretary ?—Yes.

1485. Is there any security that the Secretary will always be a man of science ?—I cannot say that there is, yet the Institution having established a reputation while under such direction, it is hoped that he will be.

1486. There is no provision in Mr. Smithson's will, is there, that the Secretary shall be a man of science ?—The will is expressed in these few words: "I leave my property to the United States of America, to found an establishment under the name of the Smithsonian Institution, for the increase and diffusion of knowledge among men."

1487. So that if at some future time the Regents should think fit to change the destination of the work which is done by the Institution, and to turn all its machinery towards the increase of knowledge in the direction, we will say, of history, or philology, or literature, such change would come completely within the meaning of the words of Mr. Smithson's bequest ?—Under the words "increase of knowledge," I do not think that literature could be included, though history and philology are subjects which fall within the present plan of operations.

1488. At present I understand the activity of the Smithsonian Institution is really directed almost exclusively to-

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wards scientific matters?—Yes, including ethnology. The Institution is making great collections in everything relating to the ancient inhabitants of the country. During the last year many mounds have been opened, and their contents described and brought to the Institution, and casts have been made of them for distribution. In languages, the Institution has published a volume on the Yoruba language of Africa, from the investigation of an American missionary. It has published a work upon the language of the Dakota Indians by another missionary, and it has collected one hundred and fifty different Indian vocabularies, which are now in the hands of persons to be elaborated.

1489. Still it may be said that the predominant activity of the Institution at present is in the direction of physical science?—Yes, and in the direction of natural history.

1490. Indeed it is mainly in the direction of natural science at present?—Yes.

1491. But still we may regard that as a sort of accident; that is to say, that hereafter the predominant activity of the Institution might be directed towards philology, or to history, or to other branches of human knowledge, without in any way violating either the words or the spirit of the bequest?—To anything that is susceptible of a definite increase. A number of papers have been presented to the Institution on philosophy, but the answer is, what are the evidences that they are true? and the rule adopted is to publish no unverified speculations. The author is allowed to give his hypotheses, because of course it is considered that all advance in science is by antecedent probabilities or antecedent hypotheses. An hypothesis which is of value must produce fruit, and when it so produces fruit it is then ready to be published by the Institution.

1492. May I ask if such a work as Kant's Critique were offered to the Smithsonian Institution, would they publish it?—I think not.

1493. On what ground?—The indefiniteness of the subject.

1494. Supposing such a work as Mill's Logic were offered, would they publish it?—I think not.

1495. In fact, practically, philosophy is excluded?—Yes; not by any rule of the Institution, but by the nature of the subject.

1496. Supposing a work on philosophy were presented, it would come to you officially, as Secretary, would it not?—Yes.

1497. Are you, as Secretary, bound to lay it before the

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Board of Regents?—No, I lay it before a commission to examine.

1498. Who nominates that commission?—The Secretary.

1499. That is to say, the Commission is nominated *ad hoc* by the Secretary?—Yes.

1500. I have no doubt that that hitherto has been a very beneficial arrangement, but practically the whole direction of the Institution is in the hands of the Secretary?—Yes.

1501. He is in point of fact absolute?—Yes; but his acts are subject to the control of the Regents, and to the criticism of the public.

1502. Would the Smithsonian Institution think it proper to make any grants for personal expenses, that is to say, suppose a man of great ability were applying to them for a grant in order to pursue some given research; if he were to say, I must live, and meanwhile may I use a certain portion of this grant to maintain me; would that be allowed by the rules of the Institution?—It would require considerable discretion; no definite rule has been adopted with regard to it. Where a person has gone on an expedition, the Institution has sometimes paid his expenses; and it has also sustained explorers. Before the purchase of Alaska, the Institution sent up into that country a young man, who was there two years, he brought the Institution in relation with the servants of the Northwest Company, and they have since furnished meteorological observations, ethnological specimens, and also specimens of all kinds in natural history, and the Institution in return has appropriated $500 or $600 a year to purchase books for them, and such other articles as they cannot readily obtain. When Alaska was purchased or about to be purchased by the United States, the Secretary of State called on the Institution for information with regard to that region.

1503. I apprehend that if a physical philosopher made application to you for the means of pursuing some particular research, you would think it proper, supposing the application appeared to be of value, to supply him with funds for the purpose of setting up the apparatus which he required?—Yes.

1504. Do you say that you would make him a grant of $1,000 for that purpose?—Yes, we might.

1505. But if a mathematician, whose apparatus cost him nothing, applied to you and said simply, I want to live for a year for the purpose of working out such and such a problem, you would not feel yourself at liberty to grant him a sum for his maintenance?—If the Institution had sufficient

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funds it would; but with the limited means that it has, it could not in justice to other researches.

1506. In answer to a previous question you spoke, did you not, of the appointment of quasi professors?—At the beginning of the Institution at one time that idea was entertained, but it was not carried out, the income not being sufficient.

1507. You are aware, I dare say, that in the Colleges of France there is a body of professors who are charged merely with the duty of advancing science, and giving courses of lectures of a most advanced character in their special departments?—Yes.

1508. Is there anything of that kind in the Smithsonian Institution?—No.

1509. Do you think it would be desirable, supposing the Institution had funds, that such should exist?—I think it would be very desirable that the Government should support such professors; and I think that in time the American Government will come to a proper appreciation of abstract science, and make appropriations for such lecturers as you mention in the city of Washington.

1510. What evidence do you require that the money which is given for investigation by the Smithsonian Institution is properly expended?—The main evidence is the fruit which is produced. The Institution is very cautious in not making an appropriation to any person who has not been found capable of advancing knowledge by original research.

1511. Supposing a grant made to a given person, A.; when his memoir is complete is that memoir published as a matter of course?—Yes, if it be found of value.

1512. Do the commission of which you spoke just now in any way give a report upon the results of his investigations, or go into them at all?—Yes, they very frequently make suggestions, and say, this point is not well developed, or we think the author has made a mistake.

1513. Is the memoir referred to them before it is published?—Yes.

1514. So that it is possible that they might at last reject altogether a memoir produced under those circumstances?—Yes; but then it comes back to the Secretary, and he may not be satisfied with its rejection, and he may refer it to another commission, the names of the first commission not being published.

1515. The commission acts in the first place as a referee before the grant is made, and secondly as a referee after the work is produced?—Yes.

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1516. Is it wholly in the discretion of the Secretary to accept or to refuse the reports of the commission?—Yes, it has been so.

1517. Would you think it within the purpose of the Smithsonian Institution, supposing you had the funds, to make a grant for the purpose, we will say, of establishing such a thing as a physical cabinet or an observatory?—Yes. I think physical observations are of the greatest importance in the United States for observing the spontaneous phenomena of nature, and also for original experiment.

1518. I understood you to say just now that before the fire took place you had a very good physical cabinet in the building of the Smithsonian Institution?—Yes.

1519. Is there such a thing in the United States now as what is understood as a complete physical cabinet?—There are several connected with the science schools. There is a technological school in Boston which is well supplied with apparatus, and the scientific school at Harvard is well supplied, and also the one at New Haven, as well as that connected with Columbia College, New York.

1520. Was your cabinet open, under certain restrictions, to any person who wished to make investigations?—Yes, but not very much was done, because it was not in a very large place. My idea would be that if the funds were sufficient, and men could be found capable of advancing science, they should be consecrated to science, and be provided with the means of living above all care for physical wants, and supplied with all the implements necessary to investigation.

1521. What means would you adopt to prevent any arrangement of that kind from degeneration into a mere support for idle people, who would not make use of their opportunities; because such things do happen, even in the scientific world, that men who have abundant opportunities immediately begin to cease to use them?—Their tenure of office should depend upon the fruit that they produce.

1522. Do you think it would be desirable to connect with all such appointments the duty of teaching?—Yes, I think that a certain amount of teaching is an advantage to an investigator.

1523. Do you not think that that may be one of the best practical arrangements by which a man can be made to do his duty in such a position?—If he is required to teach a limited amount, and especially to teach the branches that he has been investigating himself; such a man always possesses an enthusiasm which he scarcely ever fails to impart

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to his pupils; they are proud of him, and the reputation of the institution is promoted.

1524. I think you are of opinion that it would be no drawback to the most profound investigator to be obliged to give a course of lectures if it were not too onerous?—Yes, I should think that in imparting information to others he would gain clearer conceptions himself; the mere repeating and giving an account of the investigations is an advantage.

1525. Does the National Academy receive any support, either from the General Government or from the State in which it is lodged?—It was incorporated by Congress, and receives nothing from any State.

1526. Does it receive any support from Congress?—No, it has not as yet, except an appropriation of $6,000 for the publication of its first volume of Transactions.

1527. It has no lodgement?—It has had no permanent lodgment; it meets in Washington now.

1528. It has no rooms there, I believe?—No, although the Smithsonian Institution will most probably make provision for its meetings.

1529. Do the members of the National Academy receive any payment from the Government?—No.

1530. Does the Philadelphia Academy receive any support from the State of Pennsylvania?—No.

1531. How is the museum at Cambridge supported?—It has been supported by grants from the State of Massachusetts, and by the contributions of citizens.

1532. But not from Congress?—No.

1533. Does the entire burthen then fall upon the State of Massachusetts?—The State and individual subscribers. I believe the State has made a grant on condition that an equal amount should be subscribed by individuals.

1534. (*Mr. Samuelson.*) It that for buildings?—Yes, for buildings, and for taking care of the specimens. Professor Agassiz, on his return from South America, had a very large collection of specimens, and they required a great quantity of alcohol to preserve them.

1535. (*Professor Huxley.*) You spoke incidentally of the Agricultural Department. Will you be kind enough to inform the Commission what that is?—The Government has established at Washington an Agricultural Department, the object of which is to collect seeds and plants from every part of the world, and to distribute them throughout the United States to agriculturists; to collect statistics; and to publish a report with regard to agriculture. It is doing

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very good service in collecting specimens of plants and seeds of all kinds, and distributing them in small parcels to agriculturists throughout the country.

1536. Are the agricultural colleges that you have mentioned under any control of the Agricultural Department? —No, they are entirely under the control of the State governments.

1537. The endowment of the agricultural colleges, however, was originally granted, was it not, by the central Government?—Yes.

1538. So that the central Government has endowed them, but has handed over the government of them to the States? —Yes.

1539. Do you conceive that the agricultural colleges are doing much good?—I think they are doing good in the way of teaching science, and I think they generally resolve themselves into ordinary schools in which science is predominant. In connection with them there are farms, but I think that the pupils are not very desirous of gaining manual information or dexterity in the way of ploughing. Indeed, in America, the effect of education is to render people impatient in regard to labor. In Massachusetts, where education is most generally diffused, it is almost impossible to find an American who is willing to plough, or to do any low manual labor. The people of Massachusetts prefer higher employment: they make up, however, for this deficiency by the invention of labor-saving machines. There are more labor-saving machines invented in New England than in any other part of the world.

1540. Do you think that they get as much done by their labor-saving machines, and as well done, as they would by human labor?—More and better, I think. There is always required a certain amount of human labor, and this is accomplished by the Irish and the Germans.

1541. I judge, simply from hearsay, that there must be some scientific teaching going on in the State schools, because of the demand for elementary books in science in the State schools?—I think there is. I suppose the elementary books are on natural philosophy and chemistry, probably in the secondary schools. I may say that there is in the United States a large number of normal schools for teachers, and they have lectures on all subjects, and it is considered very important that teachers should be well taught.

1542. I think there is one direction in which the Government of the United States has done a good deal for science which has not been mentioned to-day, and that is in the

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direction of publishing the results of voyages. A good deal of money has been expended, for example, has there not, upon Commodore Wilkes' voyage?—Yes, and also a large amount of money has been spent in publishing the surveys and explorations of the western parts of the United States relative to railways.

1543. (*Mr. Samuelson.*) Were the preliminary surveys for the Pacific railway conducted by the Government?—Yes.

1544. (*Dr. Sharpey.*) Were those publications distributed by the State or sold?—They were distributed to the members of Congress; each member had a certain number.

1545. (*Sir J. Kay Shuttleworth.*) I understand that the building of the Smithsonian Institution is chiefly now used as a museum?—It is.

1546. And as no professors have been appointed, I apprehend that there are no laboratories there for chemical research, or research in experimental physics?—There are not just now on account of the fire, the fire destroyed that part of it.

1547. There are therefore no means in the building for experimental research?—Not at present; there are only a few remains of the apparatus.

1548. Would it fall within the legitimate objects of the bequest to establish laboratories and observatories, and other means of experimental research, in connection with the Institution?—I think it would.

1549. And possibly, if professors, as you have previously hinted, were connected with those means of experimental research, they might make it likewise the centre of some teaching with the effect of keeping their own faculties in activity and vigor, and as you have said, giving honor to the Institution?—Yes, that might be the case, certainly.

1550. Speaking generally of an Institution of the class of the Smithsonian Institution, for the promotion and the advancement of knowledge and its diffusion, you would regard the existence of such means of experimental research on the part of professors in charge of classes as appropriate to such an object?—Yes, I should, but their attention being mainly directed to original research.

1551. In fact, therefore, you see nothing in the character of an Institution for the advancement and diffusion of knowledge which would be inconsistent with its becoming also a centre of instruction?—I do not, provided there were tutors to give minute instruction, while the teaching of the professors was restricted to certain limited courses of lec-

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tures. I have always looked upon the Royal Institution as a model establishment, doing honor to England, and producing an immense effect upon the world. More light has issued from that establishment in proportion to its means, than perhaps from any other on the face of the earth. It has had a series of great men connected with it, as Young, Davy, and Faraday, and it is still going on in the same direction. Then such an Institution as I could desire should not, to any great extent, be devoted to things of a practical character. Abstract science, above all, requires fostering and support.

1552. I understand you to say that you would greatly distinguish between an institution whose primary object should be experimental research and whose secondary object should be teaching, and an institution whose object should be teaching, combined with technical instruction in any art or industry?—Yes, I think that the first is probably of far more importance than the second. By means of the second you will supply the world with engineers and persons well adapted to apply science to useful purposes and the arts, but among the multitude we occasionally meet with a man who has the peculiar mental capacity and endowment necessary for the advancement of original science, and he, in my opinion, should be consecrated to research. The discovery by him of a single principle, such as some of those by Faraday, may become the parent of a hundred inventions.

1553. A question has been already put to you by Professor Huxley as to the means which you could suggest to be adopted to prevent the professors of such an institution for combined research and instruction falling to sleep and becoming inactive; have you any suggestions to offer?—None, except the formation of a proper public opinion in regard to that matter, and it being definitely understood when the election was made, that if the professor does not fulfil his duty, if he goes to sleep and neglects the advancement of science, he must resign his position. Of course he may become incapacitated by disease or age, and if he has done good service he should then be provided for by the State.

1554. (*Dr. Sharpey.*) Are you aware that in German universities they appoint extra professors, and they also give permission to teach to what are called *privat-docenten*, who may give instruction upon the very same subjects for which the ordinary professor is appointed to teach, so that in that way he may be stimulated to exertion, or defects may be

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supplied?—I should think that a plan of that kind, under certain restrictions, might be advantageous.

1555. (*Marquis of Lansdowne.*) Would you say that there is at this time a great demand in the States for engineers and marine architects or surveyors?—Yes, more particularly for engineers.

1556. Is the supply at all equal to the demand; supposing, for instance, that a young engineer were to make his appearance in the States, would he have no difficulty at all in finding employment, or is the rate of supply sufficient?—He might have some difficulty at first.

1557. But on the whole you think that the supply is sufficient?—No, I think the demand is increasing; the supply perhaps is coming up to it. A large number of our young men go to Germany to study practical science.

1558. Have you any means of knowing from what sources the supply is met; take, for instance, the number of engineers, which must be considerable by this time, and the number of surveyors, can you tell where they have acquired the knowledge necessary for their profession?—I think either abroad or many of them in the States at those scientific schools which have been established within the last few years; for instance, the school at Harvard, and at Yale College in New Haven, and at Columbia College in New York.

1559. If I were to ask you the same question as to practical chemists, is there a dearth of them, or is there a sufficient supply?—I do not hear of any young men that are unemployed in that line. There are a great many manufactories established in the United States, and if a young man is apt, I think there is no doubt that he will get employment.

1560. At those universities that you have enumerated just now, is there anything approaching to State grants, or regius chairs in aid, we will say, of practical chemistry, or such sciences as engineering, and so forth?—The school at Cambridge was established by an individual, and perhaps the university from its funds makes an appropriation. The school at Columbia College, New York, is entirely supported by the college, which is a very richly endowed institution. The New Haven school was also endowed by an individual, and, in common with the other schools which I have mentioned, receives fees from the pupils.

1561. (*Mr. Samuelson.*) Are the funds of Columbia College derived from private sources?—From original donations of land from the State of New York, which, in the

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progress of the extension of the city, has become very valuable.

1562. (*Marquis of Lansdowne.*) The endowments are not either from Congress or from the State in which the institution is situated?—In the case of Columbia College, the grant was from the State of New York; and in many other cases the States furnish aid to the universities.

1563. I think you said that in the primary schools the cost of education depended upon the regulations of the individual State?—Yes, in all cases.

1564. Are you aware that elementary science enters into their course in any of the States, or in any of them more than the rest?—No, I am not familiar with the amount of teaching in the different States. I have not paid sufficient attention to that subject, but, as Professor Huxley remarks, the great sale of scientific books, and the higher instruction given to teachers would lead one to suppose that a good deal of scientific instruction is given, although it may not be necessarily required.

1565. I think you said that there was a government officer called the Commissioner of Education. I presume that there would be some record in his department as to the different kinds of education given in the different States?—Yes, I think by application to him when I return I might get the statistics, and I will forward the statement to this Commission if it is required.

1566. (*Chairman.*) Does Congress exercise any control over the application of the funds dispensed by the Smithsonian Institution?—No.

1567. The only connection between Congress and the Institution is that a certain number of Regents are appointed from the House of Representatives and the Senate?—But these Regents are responsible to Congress for the conduct of the Institution.

1568. Are you in the habit of making any annual returns to Congress of the manner in which the funds have been applied?—Yes, an annual report is made, and that would form a pamphlet a little larger than this before me, and, in order to take advantage of the liberality of Congress, an appendix is added to this report, consisting of translations from foreign journals, of semi-popular information such as would be important to the teachers of the country, and to meteorological observers. About 15,000 of these reports are printed at the expense of Congress, and about 4,000 are given to the Institution for distribution amongst teachers

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and among its *collaborators;* and in that way there is a considerable diffusion of knowledge.

1569. Has it ever been under consideration whether Congress could properly make an additional appropriation in aid of the funds of the Institution?—Yes. When the funds of the Institution came to America, they were lent to one of the States, and that State failed to pay; but Mr. Walker, one of the Secretaries of the Treasury, established a rule that all money coming into the Treasury of the United States on account of the land sold for that State should be retained until this debt was repaid by the State. The United States, however, after eight years, assumed the debt, and declared that the Smithsonian fund money is for ever in the Treasury of the United States.

1570. And there was no actual loss from it?—No, there was no actual loss to the Institution, and now it appears there will be no actual loss to the Government. The proposition has been that the Government should take the proceeds of this old debt, and appropriate it to the establishment of a museum, thus relieving the Institution entirely from the charge of the museum; and there is nothing to prevent Congress doing so.

1571. Are the annual applications in excess of the funds that you have at your command?—We could dispense a great deal more than we do, but in order to satisfy the Regents it is necessary that we should save a little for contingencies, and show a favorable balance.

1572. You accumulate every year, do you not?—Yes, a little.

1573. (*Professor Huxley.*) You have doubtless heard that in this country the Government places £1,000 every year at the disposal of the Council of the Royal Society, and that the Council of the Royal Society appoints a committee, consisting not only of its own members, but of representative men of science belonging to other scientific bodies, and that committee is called the Government Grant Committee. All applications for portions of the money granted by the Government, are made to that committee, and they are practically decided upon by it. The committee consists entirely and purely of men of science. It is in fact a sort of scientific parliament on a small scale, containing the leading representatives of every scientific body in the country. May I ask whether you think that that is the better mode of administering funds in aid of science, than through such a body of Regents as you have in the Smithsonian Institution?—I should not like to say that it was better. On that

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point I would rather not decide. The Institution has been formed under peculiar circumstances, and it has so happened that the funds are in charge of men who are not scientific, and it must always be so; but they are now men who are in favor of science, and they trust to the Secretary the management of the establishment. But I think that the appropriation of a sum of money expended in the way you mention is of vast importance, and I am only surprised, excuse my saying so, that a nation of the wealth and intelligence of Great Britain should appropriate so small a sum.

1574. You have doubtless heard that small as that sum is, it is not all expended?—No, I have not heard that. There are various fields of research in which twenty times that sum might be readily expended.

1575. (*Chairman.*) Are there any other points on which you would like to give the Commission any information?—I do not think I can give any of importance.

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